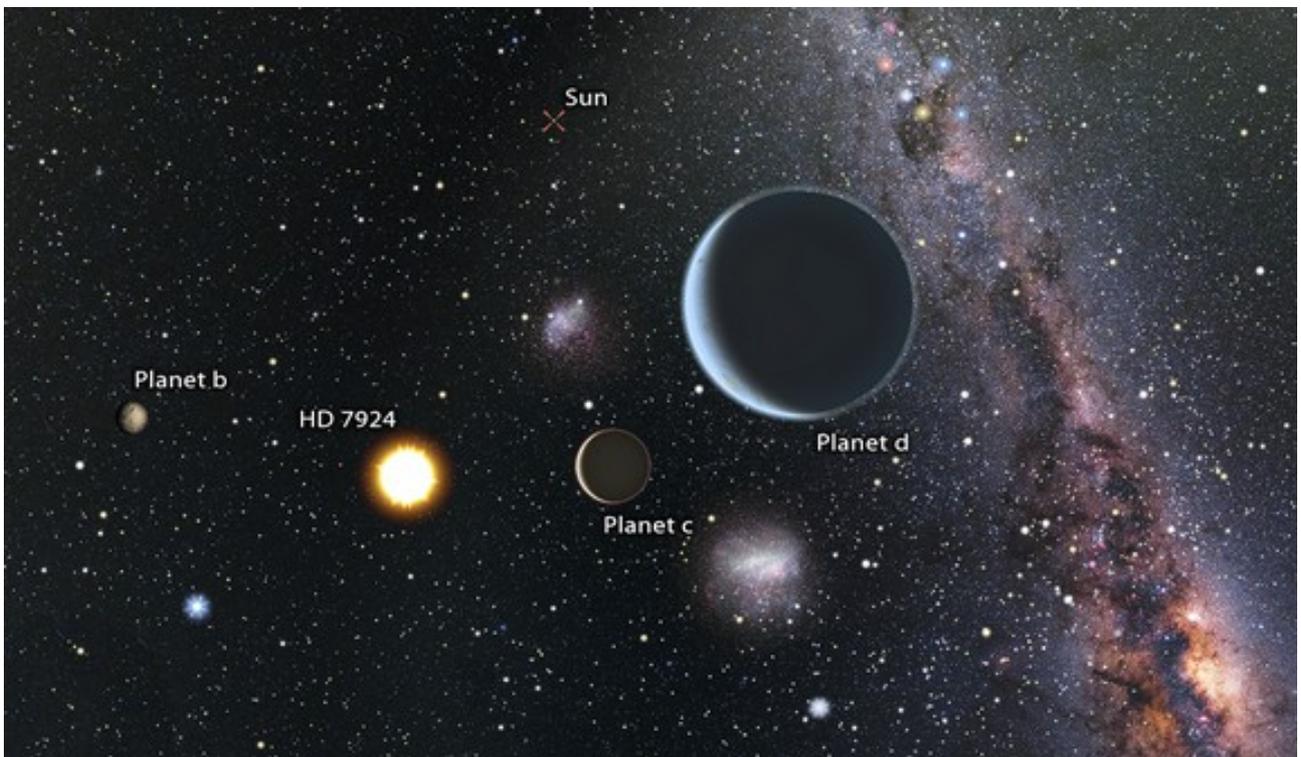


Thanet Astronomy Group

Astronomy for Everyone in Plain English

NEWSLETTER

May 2015



An artist's impression of the planetary system around HD 7924

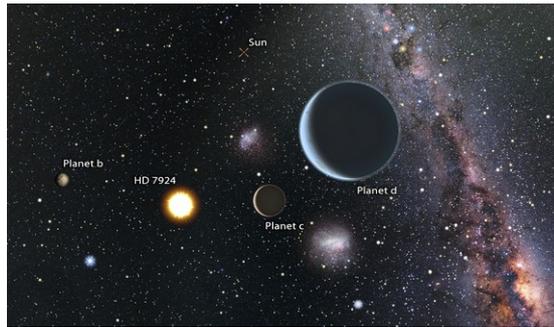
Credit: Karen Teramura & BJ Fulton, UH IfA.

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

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About the Cover Picture

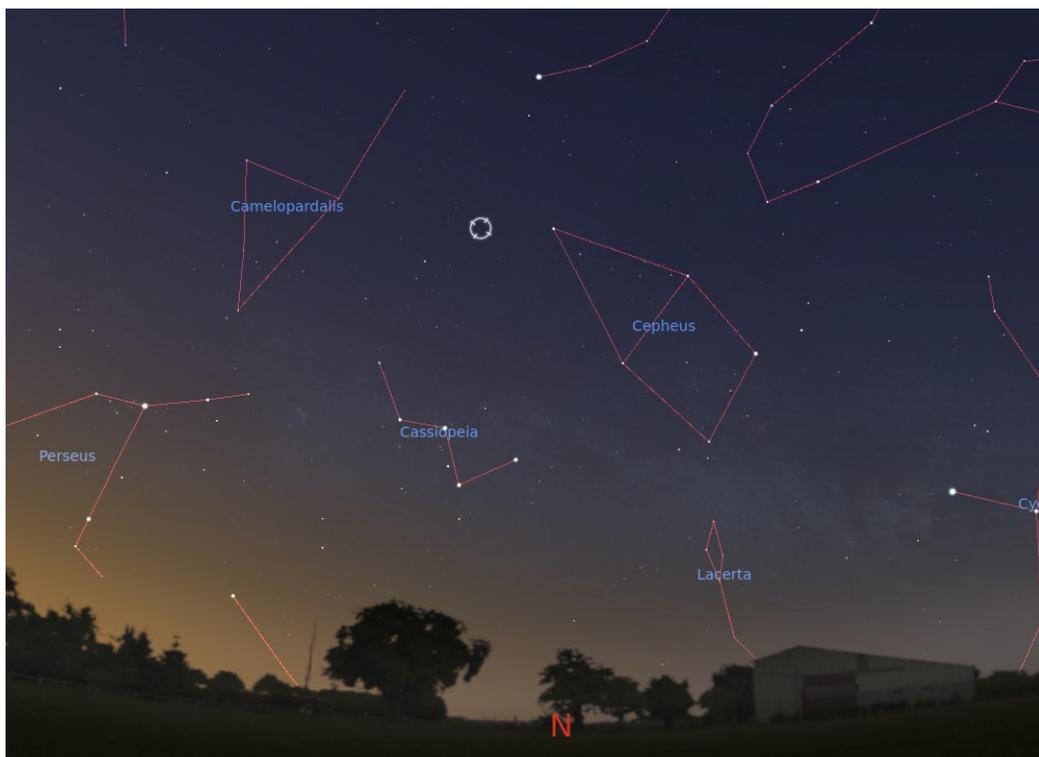


An artist's impression of the planetary system around HD 7924

Credit: Karen Teramura & BJ Fulton, UH IfA.

The star HD 7924 is a magnitude 7 star this makes it well beyond what we could expect to see by eye in our light polluted sky and even just beyond what you could see by eye in a very dark sky. ***The limit by eye is magnitude 6.***

But it is an easy target with a telescope, if you know where to find it. It is in the constellation of Cassiopeia, at about 54 light years from Earth.



HD7924 9th May 2015 @ 21:30:00 Marked by the white circle

Back in January 2009 it was discovered that there is an Extrasolar Planet orbiting around HD 7924. An extrasolar planet is simply a planet that orbits around a star that is not our Sun.

Now astronomers from the University of Hawaii at Manoa, the University of California, Berkeley, Tennessee State University in Nashville, and the University of California Lick Observatory, just discovered two more extrasolar planets around HD7924.

About the Cover Picture

Like HD 7924 b, HD 7924 c and HD7924 d are many times the size of earth, this makes them Super Earth's. A Super Earth is a planet with 2 to 10 times the Earth's mass.

They are also known to orbit much closer to their star than Earth does. All three orbit closer to their star than Mercury orbits our Sun. This gives them years of 5, 15 and 24 Days!

The planets HD7924 b and HD7924 c were discovered using three telescopes :-

The APF (Automatic Planet Finder) on Mt. Hamilton, California.

<https://www.ucolick.org/public/telescopes/apf.html>



Lick Observatory Automated Planet Finder (APF)

The twin Keck telescopes on Mt. Mauna Kea, Hawaii have a 10m primary mirror each.

<http://www.keckobservatory.org/>



Keck Observatory Mt. Mauna Kea, Hawaii

And the APT (Automated Photometric Telescope) in Arizona.



TSU Automatic Photometric Telescopes (APTs) at Fairborn Observatory in the Patagonia Mountains of southern Arizona.

See the PDF Document at <http://schwab.tsuniv.edu/papers/apj/hd7924/press-release.pdf> for more info.

Thanet Astronomy Group Contact Details

Executive Committee

Chairman	Daniel Day	01843 228 904
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Committee

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JAC & Gill	Gill Palmer	01843 848 064

Member's Meeting Dates and Times

Thanet Astronomy Group Member's Meetings Dates and Times

6th May 2015 at 7.30pm

3rd June 2015 at 8pm

1st July 2015 at 8pm

5th August 2015 at 8pm

2nd September 2015 at 8pm

7th October 2015 at 7.30pm

4th November 2015 at 7.30pm

2nd December 2015 at 7:30pm

6th January 2016 at 7:30pm

3rd February 2016 at 7:30pm

2nd March 2016 at 7:30pm

6th April 2016 at 7.30pm

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

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

Thanks to Alan and Kate for all their support, in providing this wonderful venue.

What we did last month

April 2015

Wednesday 1st The month this time starts off with a bang.

We start with the members meeting. At the AGM the members had requested some more help with Stellarium. I guess with the amazing set of features this program has the more help the better.

Even I find that fantastic things are being added all the time. So we spent most of the evening practising with the basic operation of this fantastic program.

Saturday 4th Public Outreach Meeting.

Today was very busy, loads of members turned up to help with the queries from the general public.

Sunday 5th Easter Sunday Stargazing.

This was without a doubt the very best Stargazing Evening we have ever done! It was attended by most of the members + Families (40 Adults + 10 Juniors) We had a list of no less than 15 objects to see and almost everyone saw almost all of them. (Mars : Venus : Pleiades : Rigel : Betelgeuse : M42 : Sirius : Jupiter : Pollux : Caster : Andromeda Galaxy : Cassiopeia : Polaris : Arctues : Moon).

Saturday 11th Public Outreach Meeting.

We were busy today with both children and adults. The JAC & Gill children did dot to dot constellations and marked out the Solar System to scale around the bay. (1 pace to 1,000,000 miles)

Saturday 18th Public Outreach Meeting.

We were outside today, the weather was warm and sunny. We set up most of the telescopes to look at the many sun spots visible this week. There were many people interested in what we were doing and many of our members turned up to help answer questions from the public.

We also had a lot of the JAC & Gill Junior club turn up. Gill spent most of the afternoon teaching them some basic astronomy and at the end of the afternoon we took them on a walk around the bay marking off the Sun and all the planets in chalk at their correct distances from the Sun.

We used a scale of 'one step to 1 million miles'. Due to the building works around the far side of the bay we ran out of space just after Jupiter !!! Even without the building works we would never have got to Uranus before we ran out of space. ("space") lol

Wednesday 22nd Stargazing Course Part 1 : This was very well attended, and every left smiling.

Saturday 25th Public Outreach Meeting.

Today was not a bad day weather wise, although it was a little windy. We spent half the time outside using the telescopes then we all moved into the cafe at about 3pm to warm up with tea and coffee and continue our discussions.

Tuesday 28th Back to school after the end of the spring term holiday.

This week we are starting part 4 of the stargazing course. We will be teaching the children how to put all that they have learnt so far into practise with the help of Stellarium.

Wednesday 29th Stargazing Course Part 2 : Almost everything we learnt about in the presentation we were able to see for real in the sky out side.

With only 7 meetings this was a very quiet month at Thanet Astronomy Group.

Our thanks go out to all that helped to make all this possible !

Danny Day.

Junior Members Page



This has been the busiest month ever for JAC and Gill, by far! Each week during April, our Junior members have been avidly learning about



what they could see in the Spring sky. In preparation for our Easter Stargazing Party, the children calculated how many constellations and planets they might see. They then gave a presentation to parents and members who were gathered for our Easter Saturday meeting at West Bay Café.

For those of you who missed this impromptu Stargazing Lecture or the Easter Sunday Stargazing the final total was 15 constellations and 3 planets, most of which are still visible in the night sky now!

Starting in the North...Cassiopeia, Cepheus, Ursa Major and Ursa Minor...the Bears which both help to direct us to the Pole Star, Polaris. Heading East are...Draco and Bootes...then South East to Leo and Cancer. In the South is Gemini, our JAC & Gill symbol!

Then in the South West...Orion who was hunting for the Easter Bunny... Lepus. Finishing in the West ...Taurus, Aries, Andromeda and our famous Pleiades... the Seven Sisters symbol for Thanet Astronomy Group! The 3 planets which are clearly visible at the moment are...Venus...near Taurus in the West, Mars...near Aries also in the West and Jupiter...near Cancer in the South East.



The second Saturday meeting of the Easter Holidays was our 1st Anniversary! As it was a beautiful sunny day, we decided to find



suitable stones on the beach to create our own Story Stone Solar Systems, one member even used the box we collected them in to use as the atmosphere around the Earth!!!

Then we celebrated with Star crisps and Star cluster cakes while learning about the Circumpolar Constellations. These are the constellations which rotate around the Pole Star and are visible in the Northern Hemisphere all year round.

The children had great fun joining up the dot-to-dots patterns for 5 of the constellations in our list above! Cassiopeia (W), Cepheus (a rocket), Ursa Major (the Great Bear), Ursa Minor (the Little Bear) and Draco (the Dragon)!!!

Junior Members Page



Last Saturday saw many new faces who were treated to a brisk walk through the Solar System by Danny as he showed the Juniors the vast distance between each of the planets using paces to scale! Unfortunately, we ran out of promenade before we could get to Saturn... but I think they got the point!



To let off steam, the Juniors created their own Space Aliens using balloons to see whose could travel through space the furthest!!! George's won as the wind took it half way to Saturn!!!



I would like to say a huge Thank You to Gill for the amazing job that she does with the children and Junior Club, as well as being the Group Secretary which involves a huge amount of work. You can see from the faces of the children that all the hard work is worth it :- Danny.

Gill P.

Charles Messier

Charles Messier (1730-1817), a French astronomer who started his astronomical career at the age of 14 by discovering his first comet.

He went on to add another 13 comets to his list and became a renowned expert on the subject, in all he discovered 20 comets.

He then compiled a list of celestial objects including, Galaxies, Nebulae and Star Clusters.

By 1771 he had published his first catalogue of 45 objects. His finally catalogue reached 110 objects.



Charles Messier

Object (M1) is the Crab Nebula in Taurus and object (M110) is the dwarf galaxy found next to the (M31) the Andromeda galaxy. Both a Moon crater and an Asteroid bear his name.

There are dozens of other catalogues, listing the names and numbers of the objects in the sky.

The main ones that are used are :-

M : (Messier Catalogue)

NGC : (New General Catalogue)

IC : (Index Catalogue)

C : (Caldwell) Devised by **Sir Patrick Caldwell Moore.**

The best known of all is the (Messier) M catalogue.

George Ward

Messier Catalogue

M1	Crab Nebula	M26	Open Cluster in Scutum
M2	Globular Cluster in Aquarius	M27	Dumbbell Nebula
M3	Globular Cluster in Canes Venatici	M28	Globular Cluster in Sagittarius
M4	Globular Cluster in Scorpius	M29	Open Cluster in Cygnus
M5	Globular Cluster in Serpens	M30	Globular Cluster in Capricornus
M6	Butterfly Cluster	M31	Andromida Galaxy
M7	Ptolemy Cluster	M32	Dwarf Elliptical Galaxy Andromeda
M8	Lagoon Nebula	M33	Triangulum Galaxy
M9	Globular Cluster in Ophiuchus	M34	Open Cluster in Perseus
M10	Globular Cluster in Ophiuchus	M35	Open Cluster in Gemini
M11	Wild Duck Cluster	M36	Open Cluster in Auriga
M12	Globular Cluster in Ophiuchus	M37	Open Cluster in Auriga
M13	Great Globular Cluster in Hercules	M38	Open Cluster in Auriga
M14	Globular Cluster in Ophiuchus	M39	Open Cluster in Cygnus
M15	Globular Cluster in Pegasus	M40	Winnecke 4 in Ursa Major
M16	Eagle Nebula	M41	Open Cluster in Canis Major
M17	Omega, Swan, Horseshoe or Lobster Nebula	M42	Orion Nebula
M18	Open Cluster in Sagittarius	M43	De Mairan's Nebula
M19	Globular Cluster in Ophiuchus	M44	Beehive Cluster
M20	Trifid Nebula	M45	Pleiades
M21	Open Cluster in Sagittarius	M46	Open Cluster in Puppis
M22	Sagittarius Cluster	M47	Open Cluster in Puppis
M23	Open Cluster in Sagittarius	M48	Open Cluster in Hydra
M24	Sagittarius Star Cloud	M49	Elliptical Galaxy in Virgo
M25	Open Cluster in Sagittarius	M50	Open Cluster in Monoceros

Here is a list of the first 50 Messier Catalogue Objects, print this page out and mark them off as you see them !

Danny

Book review

Magazine Review:

All About Space

www.allaboutspace.com

I wanted to buy Brian an Astronomy magazine subscription for Christmas; so I decided to buy a few of the most popular ones and take them on holiday to see which we thought were the best ones.

All About Space seemed to be less Americanised than the others – it is also produced in Sittingbourne, Kent which sort of swayed my opinion of it too. The contents page is full of information and pictures so you can quickly spot anything that is a ‘must read now’ article. They have a really informative Space Answers section where they regularly have around 60-70 reader questions.

There is an excellent Stargazer section which gives top tips and astronomy advice for stargazing beginners. However, this does not rival our own Thanet Astronomy Group Stargazing course!! and our resident experts Danny and the three G’s.

They have an informative website <http://www.spaceanswers.com/> with free downloads and the chance to look into some of the magazines to see the contents. The last three months specials have included; the Eclipse; Hubble’s Greatest Discoveries and this month is about Saturn.

What I also like about this magazine is that there are few adverts – too many can be annoying. Celestron always have a page spread – usually the back page and just a few others randomly dotted about.



Sheila Bull
Members Secretary



This month also has a four page spread on Betelgeuse – titled ‘Watch Betelgeuse Explode’. The article investigates what will happen when Betelgeuse goes supernova. This was very interesting and relevant as we talked about this last week in the Stargazing course.

Highly recommended magazine if you are looking for something to buy as a present for someone or from a shop if you are looking for an ad hoc magazine to read.

What's in the sky this month

What to see Saturday 9th May at 9pm

Planet (Venus)

Star (Capella)

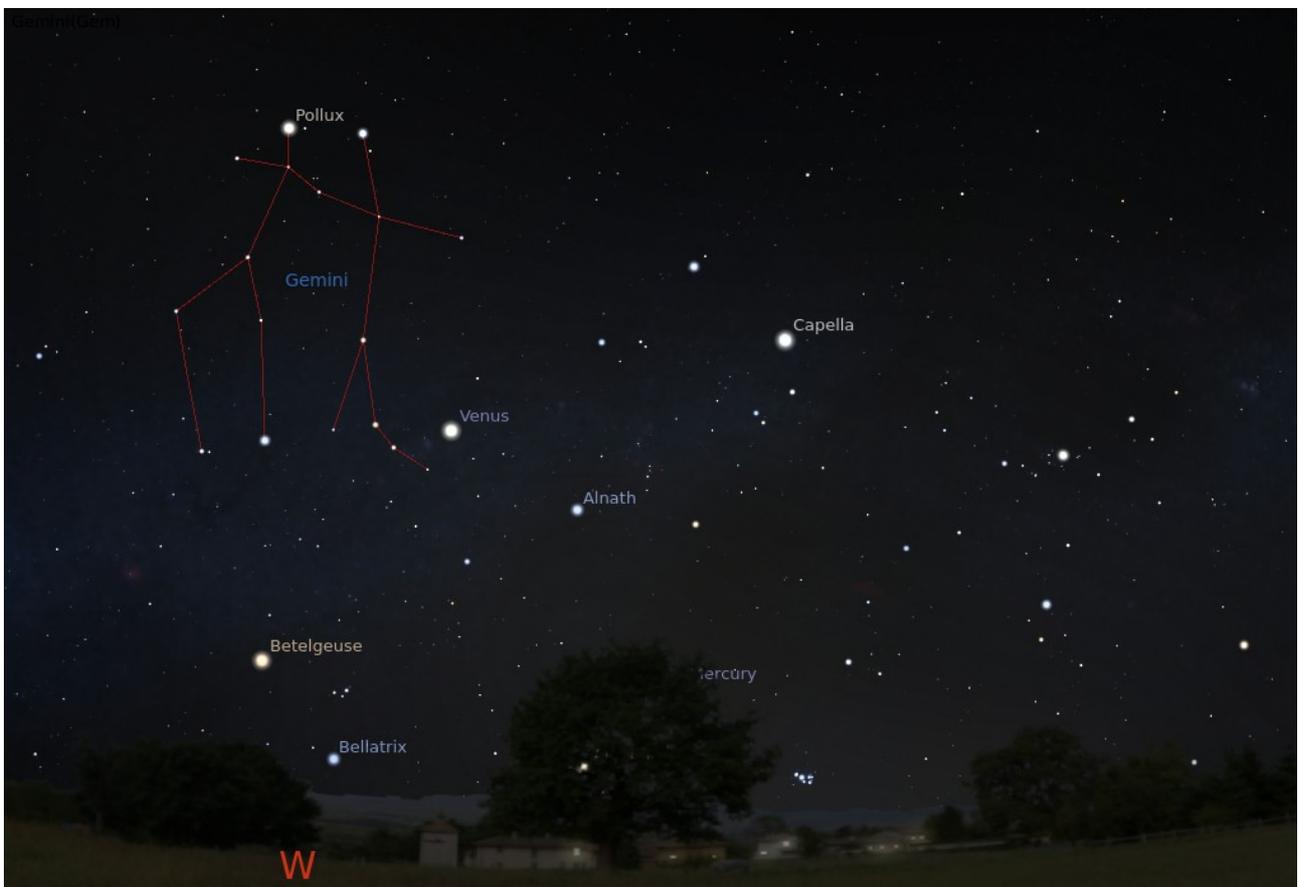
Constellations (Gemini)

This month I'll start with the planet **Venus**, then we will look at a nearby star **Capella**. Then we will end with a bright and easy to learn constellation Gemini.

The planet Venus is the third brightest object in the night sky, the only brighter objects are the Moon and the Sun.

So at about 9pm on the 9th May...

look west about 277° on your compass and up at an angle of about 28° above the horizon. You will see what looks like a very bright star, but it is not a star at all. It is the **Planet Venus**. Venus is the second planet from our Sun and has a year of 224.7 Earth Days. It has no moons and is the only planet in the Solar System to rotate clockwise. Its Day is 243 Earth Days long, which makes its Day longer than its Year!



From Left to Right – Gemini - Venus – Capella

Now look a little to the right and a little higher at about 302° on your compass and up at an angle of about 34° above the horizon. You will see the **Star Capella**. This star is the third brightest star in the northern hemisphere, so it is very easy to find, especially when you have Venus as a nearby pointer. Although Capella looks like one star by eye, it is actually four stars close together.

To see our third object, **Constellation Gemini**, look directly west at about 259° on your compass and up a little higher at an angle of about 44° above the horizon. You will see the star Pollux. This constellation looks just like two children holding hands in the sky. It is made up of 17 stars but only a few are bright enough to see easily. The brightest two are Pollux and Castor the heads of the two twins.

George Ward.

Member's Page

Every year after watching BBC's Stargazing Live I tell my mum the same thing :- '**I want a telescope!**' and this year I decided to actually do something about it. I searched to see if there were any groups I could join and lo and behold there was one in Thanet! I emailed for information and was told that they hold a free public meeting every Saturday.

When I went to my first Thanet Astronomy Group Saturday meeting, I wasn't sure what to expect, but everyone I met was so nice and friendly and made me feel welcome.



FREE Public Astronomy Meeting Saturday's 1-4 pm at West Bay Cafe, Sea Rd, Westgate-on-sea.

I told them that I wanted to buy a telescope and the first piece of advice they gave me was :- 'Don't buy one yet, talk to us first'.

They talked to me about different types of telescopes, and about what I should look for when buying one. I was invited along to the members meeting and found it very informative and I decided there and then that I wanted to be a member.

I've now been to a few Saturday meetings and I'm learning a bit more each time. I've even set up a telescope to look at the sun!

I've also been to a stargazing evening and looked at Venus and Jupiter with four of its moons through the telescope, which was amazing!



Thanet Astronomy Group Star Gazing Evening

Everyone is nice and friendly and very helpful.

My only regret is that I didn't find them sooner!

Tracy Howes

Did You Know ?

The Moon's phases

The Moon's phases, like everything in space, are constantly changing, depending on the Moon's orbit around Earth and Earth's orbit around the Sun. The Moon is lit by the Sun and light from the Sun takes about 8 minutes to reach the moon, then it is reflected off the moon and takes a further 1.3 seconds to reach Earth.

The Phases of the Moon



New Moon.



Waxing Crescent



First Quarter

Phases start with a **New Moon**, this is when the moon is directly between the Sun and the Earth and all the Sun's light is falling on the far side of the Moon and the side facing Earth is in shadow.

Then we have the **Waxing Crescent**, this shows anything from a thin line of light down the right hand side of the Moon up to just under half illuminated.

When the left half of the Moon is lit this is the **First Quarter**, at this point the Moon, Sun and Earth have changed their relative positions and the Sun is now lighting the left side of the Moon. We can of course only see the half of the left side that faces Earth and that is why it is called a First Quarter.



Waxing Gibbous Moon



Full Moon



Waning Gibbous Moon

After this is the **Waxing Gibbous** Moon. This shows as anything from just over the left half lit up to just under fully lit.

Next is the **Full Moon**. Now the relative positions of the Earth, Moon and Sun are such that the Sun is on the opposite side of the Earth to the Moon, and the full side of the Moon facing the Earth is lit.

Now the process starts to reverse, the next phase is **Waning Gibbous** Moon. This is when anything from less than the full Moon is lit down to more than half lit.

Did You Know ?

The Moon's phases



Then Third Quarter



Lastly Waning Crescent



And Back to New Moon

When the right half of the Moon is lit, this is the **Third Quarter**, at this point the Moon, Sun and Earth have changed their relative positions and the Sun is now lighting the right side of the Moon. We can of cause only see the half of the right side that faces Earth and that is why it is called a third Quarter.

Then we have the **Waning Crescent**, this shows anything from just under half illuminated to a thin line of light down the left hand side of the Moon.

Lastly the whole cycle starts again with a **New Moon**.

From one New Moon to the next takes 29 days 12 hours and 44 mins. It's known as a Synodic Month.

Our Moon travels at 3683 kph 2288 mph while orbiting Earth, covering a distance of 2,290,000 kms 1,423,000 miles.

Definitions

Waxing : (noun) Refers to the Moon at any time after New Moon and before Full Moon. It means the illuminated area is increasing.

Waning : (noun) Refers to the Moon at any time after Full Moon and before New Moon. It means its illuminated area is decreasing.

Gibbous : (adjective) Refers to the Moon at any time between it being more than half full and less than Full Moon. It means the illuminated area is more than half and less than full.



Animated Moon Phases

George Ward.

Junior Astronomers Club (JAC & Gill)

Happy Anniversary JAC and Gill



It was exactly one year ago this month that the Junior Astronomy Club began! It captured the interest of our younger members of the public... and is still continuing to go from strength to strength with every meeting!

The faces and questions may be different from week to week but our founder member, George Harvey, among others, still regularly attends and has become a familiar sight at our Saturday meetings and Stargazing Parties, often giving advice to and answering questions for other interested children...or adults!

The main aim of JAC and Gill has always been to provide a fun way for the next generation to learn about the stars and planets alongside their peers and also provide opportunities for the youngsters to join in with the Group's practical Stargazing Parties during school holidays. This has been a great success throughout the year and is now a regular event... ..weather permitting!

Our most recent Stargazing Party was on Easter Sunday at Minnis Bay when we were rewarded with clear skies for us to be able to see Venus, Mars, Jupiter and its four moons, as well as our own rising blood Moon before bedtime.

There were mini egg treats for those who managed to spot these first as they appeared out of the dusk....but also extra treats for the more observant who spotted specific named stars and constellations as it got darker!



Our Gemini Constellation, which we adopted as our JAC and Gill symbol, was in full view next to the famous Orion, as were the Great and Little Bears directing us to the Pole Star, which we have been learning about at the afternoon meetings.

If you want to learn more about the Circumpolar Constellations, check out the Junior Members' page...

...or just ask one of our Junior Astronomers!!!

“Reach for the Stars” Junior Astronomers!!!

Gill Palmer.

Executive Committee Messages

Your Newsletter

Let us know if you like these pages, and any suggestions for new pages you would like to see added, or any pages you would like us to remove.

Spreading the word about our group

If you know anyone that is interested in astronomy please let them know about our group.

The Beginners Guide to Stargazing

As you all know the star Gazing Course is now well under way and we hope many of the attendees will also come to the members meeting so they can see we really are a friendly group.



(-: Wishing you all Clear Skies :-)

Danny, George, Gill.

Adult Word Search

Black Dwarf
Black Hole
Blue Giant
Cloud
Core
Cycle
Energy
Evolve

Galaxy
Gas
Glow
Helium
Hot
Hydrogen
Nebula
Neutron

Nuclear Fusion
Red Giant
Sun
Supergiant
Supernova
White Dwarf
X-Ray

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

Junior Word Search

Atmosphere

Gravity

Orbit

Closest

Iron

Surface

Cold

Mercury

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

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 !

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