

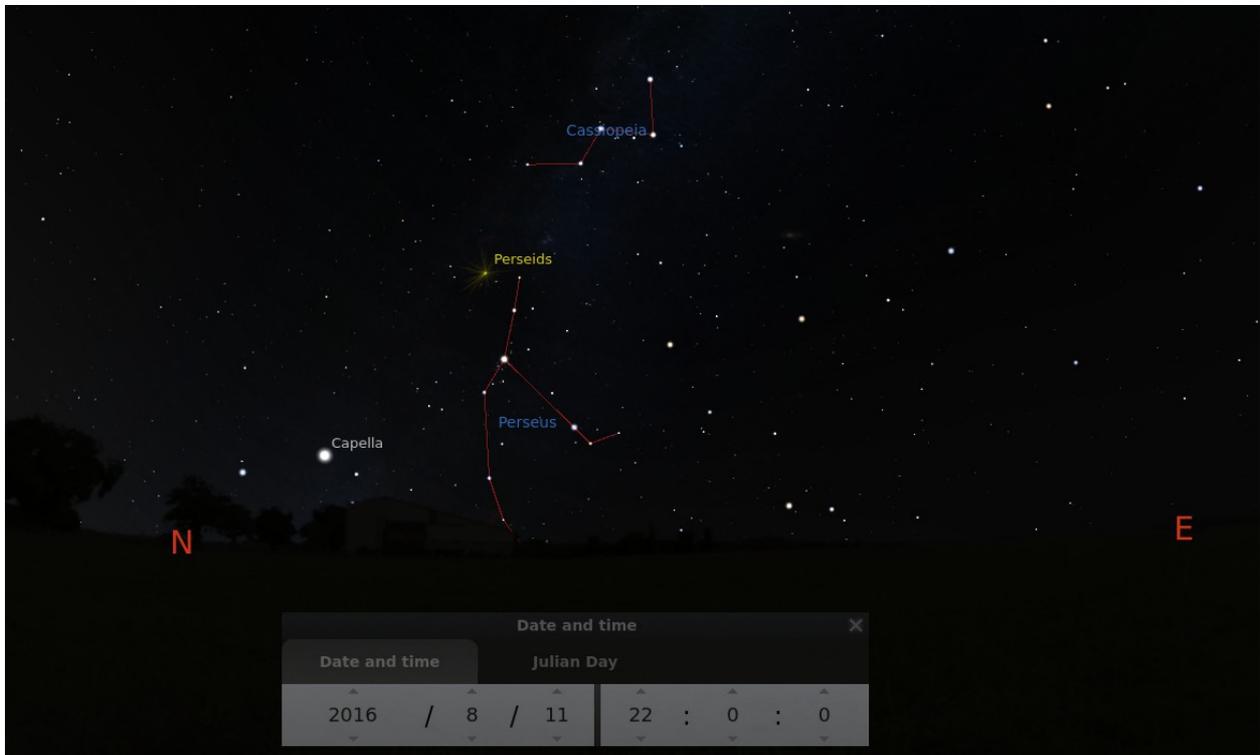
Thanet Astronomy Group

Astronomy for Everyone in Plain English

NEWSLETTER

August 2016

Perseid Meteor Shower



Night of 11/12 August 2017 @ 10pm looking North East

PLANS PREPARED FOR PLANNING AND BUILDING REGULATION APPROVALS

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

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Executive Committee Messages

July 2016

The month of August will start with :-

Note : Danny will be away from 30th July to 14th August.

August 3rd *Will be the Wednesday members' meeting*

August 6th *Will start the Saturday meetings.*

Please Note : This is the SUMMER season at the cafe and the summer members' meetings will start at 8:00pm :-

1st June 2016 at 8pm

6th July 2016 at 8pm

3rd August 2016 at 8pm

7th September 2016 at 8pm

Beginners' Guide to Stargazing Course

All those that would like to attend this course (details on the web site) please email ThanetAstronomyGroup@gmail.com to register your interest.

Telescope Making Group

This year 2016 we will be starting work on the first of 3 telescopes we hope to make this year.

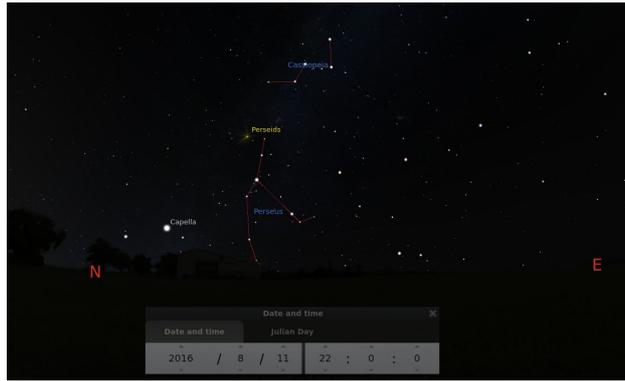
Note : There is no knowledge or experience needed to join this workshop.

All those that would like to attend the Telescope Making Group please email ThanetAstronomyGroup@gmail.com to register your interest.

When we have a list of interested people we can discuss times and dates.

Danny, George, Gill.

About the Cover Picture



Perseid Meteor Shower

On the night of 11/12 August 2016, from about 10pm, looking North East at the top left corner of the constellation Perseus (don't worry if you don't know this constellation yet). You can also look just to the left, slightly below the left dimmest star of Cassiopeia, the “W” shaped constellation.



The source of the Perseid Meteor Shower is shown in yellow above. Don't miss the Andromeda Galaxy, top right above the star Mirach

Use the illustration above to locate the radiant point of the Perseid Meteor Shower. This is the point in the sky where all the Perseid Meteors (Shooting Stars) appear to radiate from.

About the Cover Picture

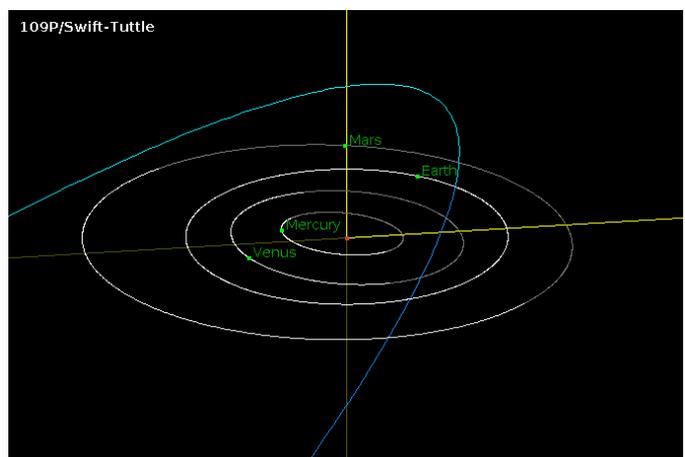
Perseid Meteor Shower

The Perseid Meteor Shower looks like all the meteors are coming from the constellation of Perseus with its alpha star, Mirphak, over 500 light year away - but this is just an illusion. The meteors are really just the dust and debris left behind around the orbit of the comet 109P/Swift-Tuttle. This comet is in a 133 year orbit around the Sun and was last seen in 1992 and will not return until 2126.



Comet 109P/Swift-Tuttle

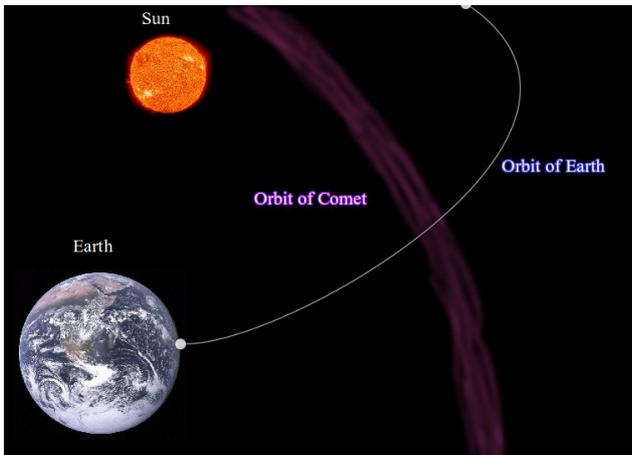
Swift-Tuttle's orbit crosses the path of Earth's orbit and, as you know, comets leave a tail. This tail is formed when the comet gets nearer to the Sun and the deep frozen ice the comet is mostly made of begins to melt and break away from the comet. This is along with bits of dust, grit and whatever else the comet is made of. This debris then forms a trail which is left behind around the orbit of the comet.



Comet 109P/Swift-Tuttle orbital path

About the Cover Picture

Perseid Meteor Shower



When the Earth passes through the meteor stream of comet Swift-Tuttle the trail of debris left behind by the comet Swift-Tuttle passes through the Earth's atmosphere and the debris is super heated due to the friction caused by the atmosphere. This is why debris (meteors) glows white hot as it burn up in the Earth's atmosphere. (We call these shooting stars.)

Earth passing through the meteor stream of comet Swift-Tuttle

So to take a step back - the meteors that look like they come from the constellation of Perseus some 500 light years away actually come from the part of space we are passing through and were left behind by a comet. It just happens that the constellation of Perseus is in line with the part of space where the trail of debris was left by the comet.

Some of you may have put 2 and 2 together and worked out that the comet, Swift-Tuttle, passes the Earth's orbit every 133 years.

What if the Earth was, at the same point in its orbit, at the time the comet was there? Well if it was - the comet could hit the Earth and, taking into account the size of the comet, this would be a problem!!!



Impact : A comet hitting Earth

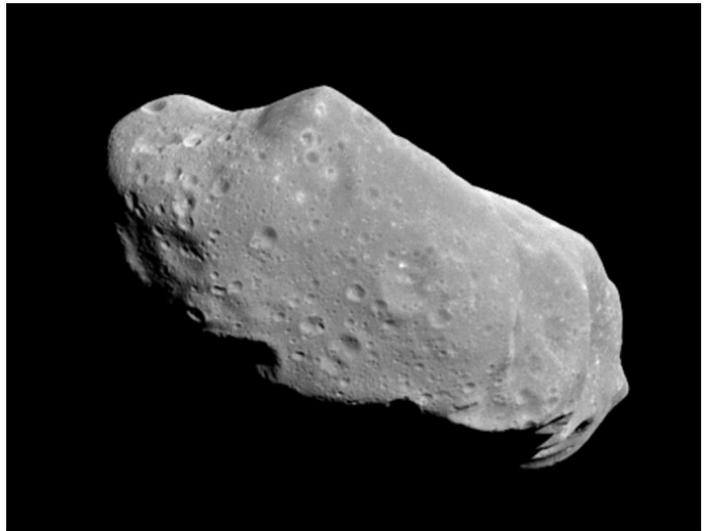
The orbit of Swift-Tuttle is very stable and the calculations have been made to cover the next two thousand years so there is absolutely no chance the Swift-Tuttle will hit the Earth in the next two thousand years.

About the Cover Picture

Perseid Meteor Shower

So now you know a little about where the meteors come from. Let's look at them a little closer. They have three different names for the same bits of debris, depending on where the bits are.

When they are in space, just waiting for a planet to come along and mop them up, they are called meteoroids (just like asteroids in space).



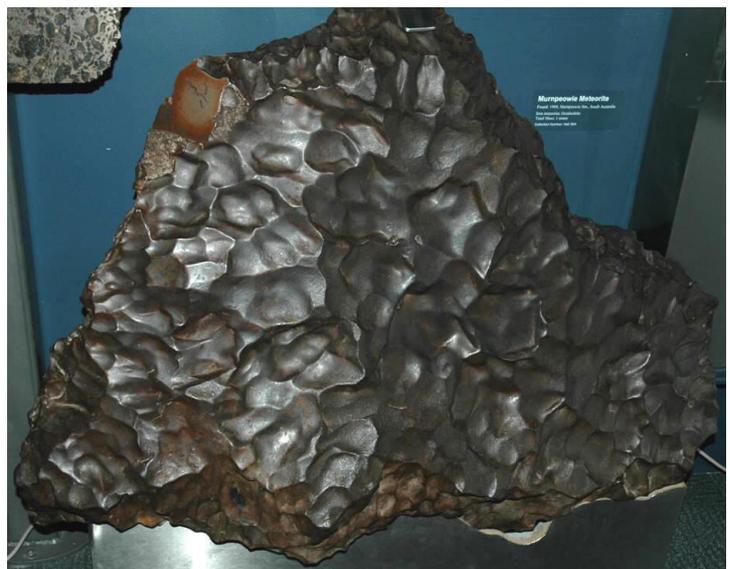
Large meteoroid Credit: NASA



A Perseid fireball photographed August 12, 2006, by Pierre Martin of Arnprior, Ontario,

When meteoroids hit the atmosphere of a planet like Earth and start to burn up they are called meteors.

Finally, if any meteors survive passing through the atmosphere and land on the planet what remains is called a meteorite.



James St. John - Flickr: [Murnpeowie Meteorite](#)

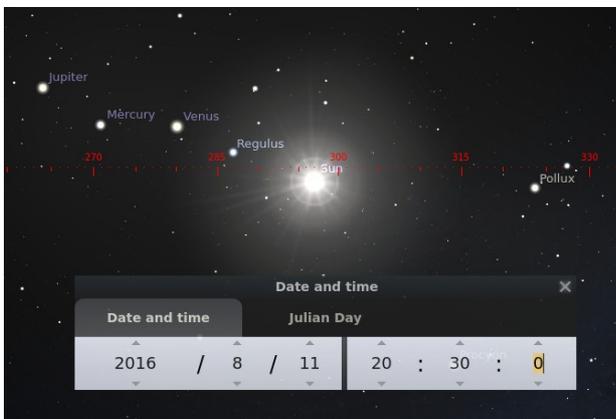
About the Cover Picture

Perseid Meteor Shower

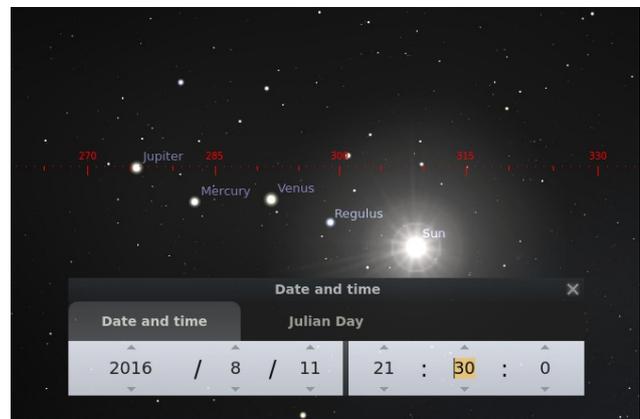
So let's move on to actually looking at the meteor shower
and work out where and when we need to look.

This year, 2016, looks likely to be a bumper year for the Perseid's, we are expecting a peak that is almost twice the usual rate - over 200 meteors per hour!

The Sun will set in the West (270° on your compass) at about 8:30pm, followed by Mercury and Venus at 9:06pm, then Jupiter at 9:30pm. By then it will be dark, so from about 9:30pm on the evening of 11th August 2016 you can start looking for meteors.



Sun set in the West (295°) at 8:30pm

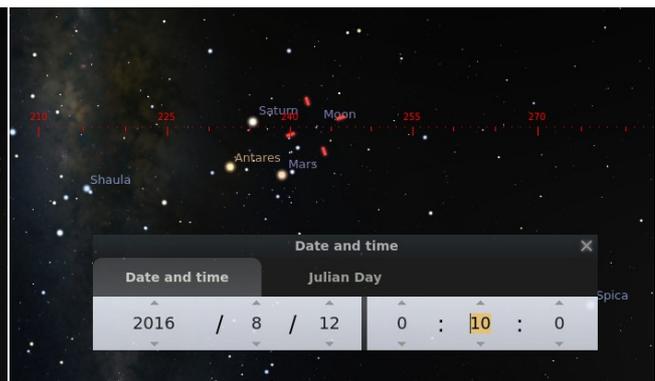


Jupiter sets in the West (275°) at 9:30pm

However the Moon (61% illuminated) will be behind you, alongside of Mars and Saturn in the South West until just after midnight. The light from the Moon will hide some of the dimmer meters but, after the Moon has set, the sky will be much darker.



Mars sets in the South West (230°) at 11:25pm



Moon & Saturn set in South West (243° & 235°) at 00:10am

So now the sky is getting much darker we should begin to see more of the dimmer meteors and the numbers per hour should start to rise. Now looking North East towards the Radiant point in Perseus, try to look at the whole of the sky in front of you. The Perseid meteors can appear anywhere in the sky.

About the Cover Picture

Perseid Meteor Shower

Remember Earth is a large (very large) ball in space orbiting around the Sun and in the path of Earth's orbit (some time ago) the comet Swift-Tuttle passed across our orbital path, leaving behind a trail of debris (astronomers call this trail of debris a 'meteor stream').



Meteoroids in a Meteor Stream

As the Earth moves through this 'meteor stream' the bits of dust, grit and small rocks (meteoroids in space) will crash into the leading half of the Earth's atmosphere. If you try to visualise this the meteoroids can hit anywhere on that side of the Earth.



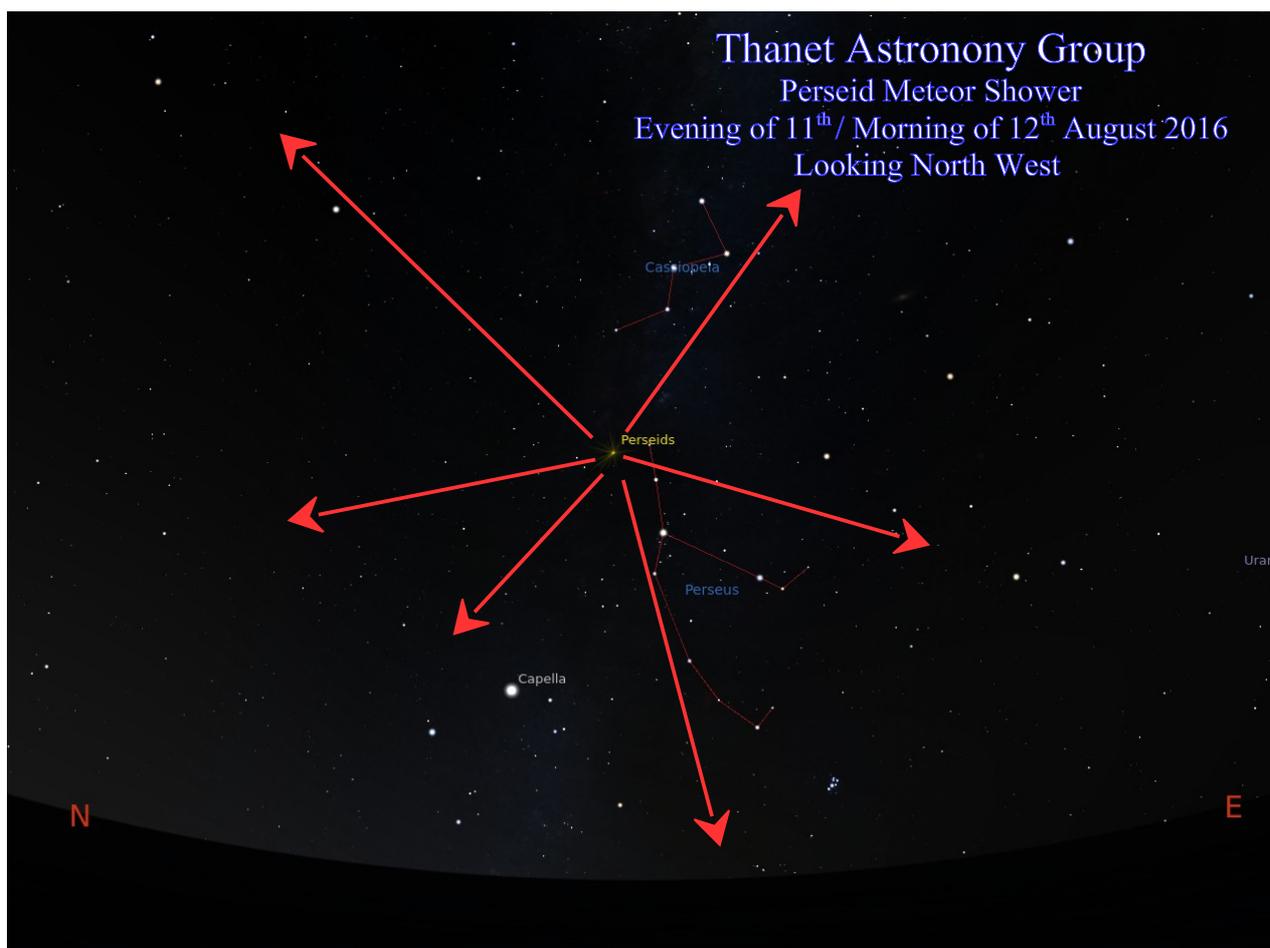
Meteor Storm

Looking at the radiant point from Earth, straight ahead into the Earth's orbital path, you will see the meteoroids that hit the Earth dead centre. They look as though they come straight at you. Those that hit towards the edges of the Earth will pass high overhead, to the left or right or below.

All of the resulting meteor trails (shooting star trails) will trace back along their trails to one point ahead of the Earth. This is called the radiant point, the place where all the trails radiate from. In the case of the Persied meteors this radiant point just happens to align up where we see the constellation of Perseus. That is why it "looks like" the meteors are coming from Perseus when they are really just a load of cast-off comet particles left behind in our orbital path by the comet Swift-Tuttle.

About the Cover Picture

Perseid Meteor Shower



Perseid Meteor Storm's Radiant Point

Remember - the night of the 11th / 12th August is the peak night. The meteor stream in space is huge and we have been passing through it since 17th July 2016 and will pass out of it on the 24th August 2016 So you can look any time the sky is clear within these dates. The closer to the night 11th / 12th August the more meteors you will be likely to see.

So look everywhere and keep a count. Good luck and let me know how it went!!!

Email ThanetAstronomyGroup@gmail.com

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 Tomkins	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

Co-opted Members

Vice Chair	Sheila Tomkins	07791 892 057
Vice Treasurer	Tracy Howes	07917 710 638
Vice Secretary	Janet Mc Bride	01227 364 092

Members' Meeting Dates and Times

Thanet Astronomy Group

Members' 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

Next Meeting

*** 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 Members' 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.

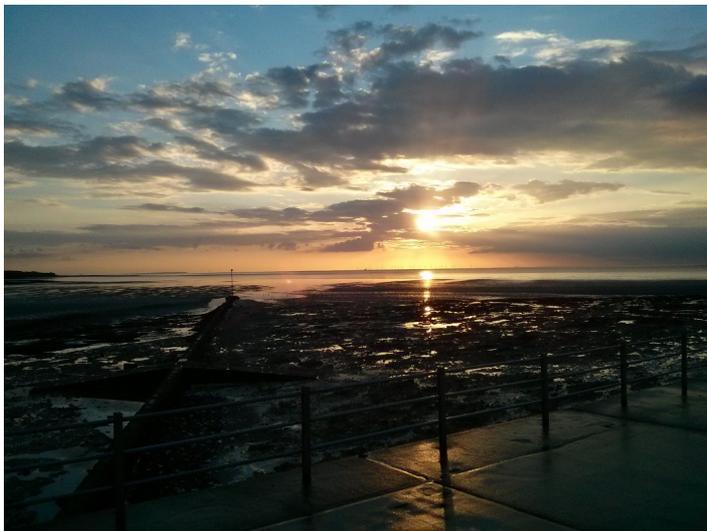
West Bay Cafe run by Alan and Kate has a very friendly atmosphere.



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 last month

Saturday 2nd July Public Outreach Meeting

The weather was very bad today it was cold and very wet. Danny was away at a family gathering. The George's had set up the telescopes under the balcony to hide from the rain and wind. JAC and Gill were in the cafe playing Star Cards! They were trying to find all the Northern Hemisphere Constellations and looking for ones named after animals! By 3pm there was still no one around outside and the rain was being driven into the back of the shelter. So we all packed up and went home early.

Wednesday 6th July Members Meeting

As we are now truly into the summer we decided to look at the summer triangle as this months theme. This was followed in the members meeting by a very close look at one of the three constellations of the summer triangle, Cygnus the Swan. The other two constellations are Lyra the Harp and Aquila the Eagle.

The members were treated to a second running of the Cygnus presentation with a tea break in the middle, during which many questions were answered.

Saturday 9th July Public Outreach Meeting

The weather is warming up nicely now, much better than the snow and ice of the winter and the rain and wind of the spring. Many more people are coming to the meeting and enjoying looking through the telescopes and asking questions about astronomy in general and our astronomy group.

Saturday 16th July Public Outreach Meeting

Another nice day with many people asking what we are looking for. One in particular was very interested in astro photography and how we attach our camera to the telescope. There are in general two main ways Prime focus, where the lens of the camera is removed and the telescope replaces the lens. See :- <http://www.astronomyforbeginners.com/astrophotography/prime-focus.php>

The other is called A-Focal, this is just a posh way of saying "hold the camera up to the eye piece and take the picture. There is of course an adapter to hold it there although you really can just hold it there. See :- <http://www.astronomyforbeginners.com/astrophotography/afocal.php>

Saturday 23rd July Public Outreach Meeting

Today was a really hot day, the hottest of the year so far. As usual the sun brings out many more people to the West Bay Cafe and therefore to our meeting. The sky was clear of clouds and the sun was a good target with a large chain of sun spots on its limb. Many people were interested in what we were doing and how we could be looking at the sun with a telescope. We explained that all the telescopes that were looking at the sun were fitted with solar filters that made it safe and that you should never look at the sun directly without the correct safety equipment.

Monday 25th July 4th St. Peters Brownies viewing night

Gill had been teaching the brownies about their astronomy badge at a sleepover camp in Westgate. The final evening was a visit to the West Bay Cafe at 9:40pm to use the 8" Celestron telescope. When the brownies arrived we set up the telescope and found Mars in the sky to the north. All the children were eager to have a look along with the adults. Mars was seen as a small reddish brown disk clearly a planet and not a star.

Then the telescope was turned to Saturn, first with a low magnification eyepiece (40X) but as the sky cleared we were able to increase the magnification to well over 100X. The view of Saturn was very clear, showing the planet and the rings circling it, also two of Saturn's larger moons could clearly be seen.

Saturday 30th July Public Outreach Meeting

The weather has turned a little milder now but still not too bad, not the oppressive heat of the last few weeks. Plenty of people interested in the telescopes and asking questions. We had less telescopes than usual today due to holidays.

Danny.

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39 - 41 Sweyn Road, Cliftonville, Margate CT9 2DD

Book review

Stargazers' Almanac 2017

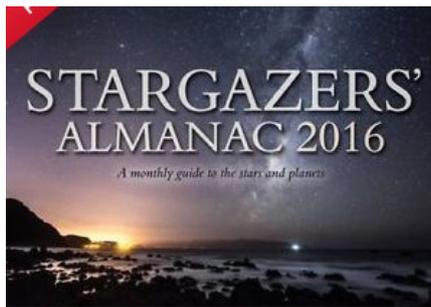
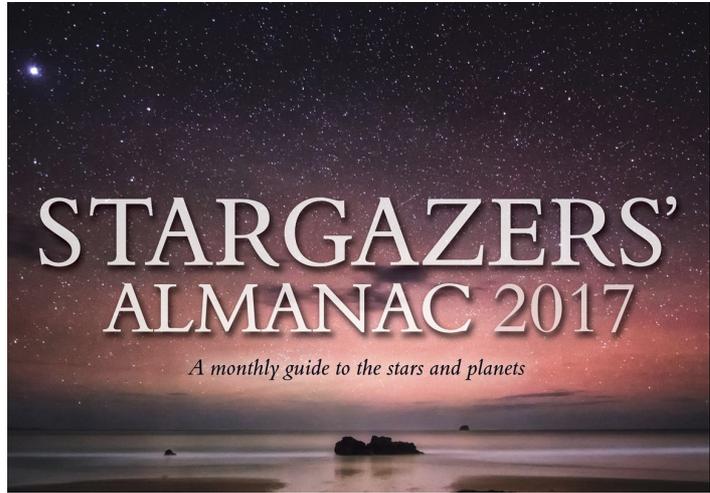
A monthly guide to the stars and planets

By Bob Mizon

This is a monthly guide to the stars and planets by Bob Mizon. This amazing book has the sky mapped out month by month to guide you through the stars and planets. Its beautifully illustrated pages will show you the night sky in all its glory.

As a Stargazers book it is written for those that want to look at the night sky by eye and to learn about and understand the positions and movements of the stars, constellations and planets.

This book is suitable for those new to astronomy, children and budding astronomers alike and is available every year so you will never miss out on the ever changing night sky.



For those of you that just can't wait for 2017 the Stargazers' Almanac 2016 is still available from eBay.

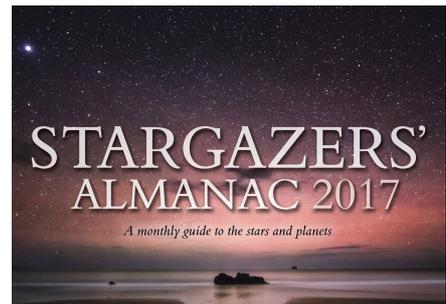
Stargazers' Almanac 2016

<http://www.ebay.co.uk/itm/Stargazers-Almanac-A-Monthly-Guide-to-the-Stars-and-Planets-2016-by-Bob-/301840412949?hash=item4647173115:g:iGUAOSwQNRXK~ux>

For those that want to get the full year's guidance from this book or to buy it in advance for a Christmas present then the 2017 book is available from eBay.

Stargazers' Almanac 2017

<http://www.ebay.co.uk/itm/Stargazers-Almanac-A-Monthly-Guide-to-the-Stars-and-Planets-2017-9781782503125-/311642167018?hash=item488f5216ea:g:Qt8AAOSwepJXbIqh>



The 2017 edition includes feature articles on the total solar eclipse which will be visible across North America in 2017 and an article about the French astronomer, Charles Messier, the comet hunter and author of the Messier Catalogue.

There is a north and south looking chart for each month, along with a Moon phase guide and a guide to the movements of the planets along with many notes and other information on the folklore, history, science and myths of the stars and planets.

Danny.

What's in the sky this month ?

What to see Saturday 6th August 2016 at 10:30pm

Globular Clusters (M13 or Hercules Globular Cluster)

Constellations (Bootes the Herdsman, Lyra the Harp, Corona Borealis the Northern Crown)

Meteor Showers (Perseids)

Globular Clusters.

A globular cluster is a “small” (relatively speaking) round group of stars, up to 1,000,000 in some cases! These exist in a spherical halo surrounding our galaxy. **M13** is one of about 150 globular clusters around the Milky Way.

You can find M13 in the keystone asterism of the constellation, *Hercules*. Hercules is located between Arcturus in Bootes and Vega in Lyra. These are two very bright stars.

M13 is a beautiful sight, well worth the effort of finding. This Globular cluster is a collection of about 300,000 ageing stars forming a sphere about 145 light years across and over 25,000 light years away from Earth. These clusters are thought to have formed between 13 and 15 billion years ago. That makes them among the oldest objects in the universe!



M13 Hercules Globular Cluster

Image using a 20-inch telescope and a CCD camera

Credit: Tom Bash and John Fox/Adam Block/NOAO/AURA/NSF



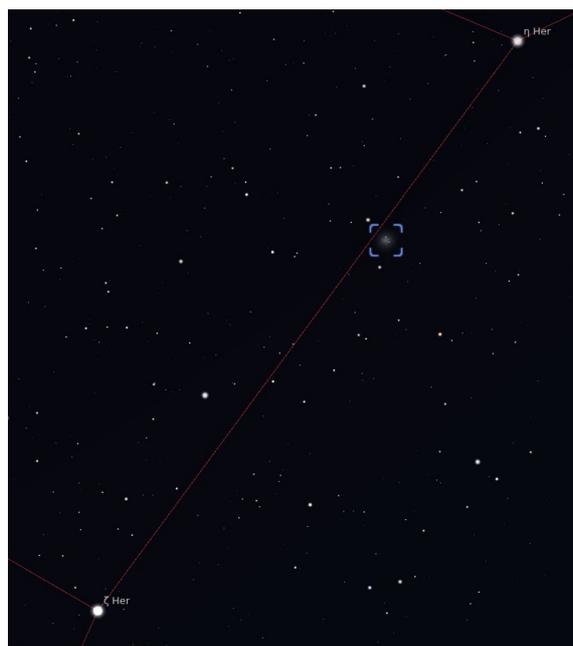
Location of Lyra Hercules and Bootes Looking South West

Note : Saturn and Mars are visible below Hercules

What's in the sky this month ?



Location of M13 in Hercules and
Corona Borealis below and to the right.



What you will see with a small telescope
Close up position of M13

Constellations.

Now you have found the star Arcturus in the constellation of *Bootes* to the right of Hercules. It would be a waste not to look between them and see if you can find the constellation of Corona Borealis also known as the *Northern Crown*. It is a small constellation consisting of only 7 stars. The alpha or main star is magnitude 2.2, so is clearly visible by eye. Its name is Alphecca in Arabic or Gemma in Latin. The 7 stars form a U shape more like a tiara than a crown. See picture above.

Perseid meteor shower 17Julyth to 24th August !!!

Look out from 17th July to the 24th August (peak date 11/12th August) our planet Earth will pass through the trail of dust left behind by Comet Swift-Tuttle which crossed our planets orbital path sometime in the past. This year it is expected to produce between 150-200 meteors per hour.

They look as though they emanate from the constellation of Perseus (hence the name “Perseid meteor shower”) in the northeast sky from 22.00 onwards and reaches its peak on Friday 12 August. There will be some interference from the light of the Moon but hopefully not too much.

If you would like to see the objects in this article or help with astronomy in general we would be very happy to help you.

Contact details

Email ThanetAstronomyGroup@gmail.com

Website www.ThanetAstronomyGroup.com

**Or come and meet us over a cup of tea at
West Bay Cafe, Westgate-on-Sea, CT8 8QA.
Saturday afternoons 1-4pm.**

George Ward / Danny.

Members' Page

SAGAS (Southern Area Group of Astronomical Societies) Summer Convention

Myself and another TAG member attended the SAGAS (Southern Area Group of Astronomical Societies) Summer Convention on Saturday 16 July 2016 at the Barn Theatre, Southwick, West Sussex. The theme of this year's convention was "Seeing and Understanding".

Speakers at this year's convention were:

William Joyce, who has an extensive CV and is a former lecturer and resident astronomer (five years) at The Observatory Science Centre, Herstmonceux; he is an astronomy, astrophysics and planetary science course developer; lecturer; observer and communicator.

He gives many outreach talks to a variety of schools; and other astronomy societies as well as public outreach meetings, very much like our own Thanet Astronomy Group, but on a much wider and deeper level. At the convention he gave a very interesting and in depth talk on the Geology of the Moon.

Prof Lucie Green. Professor of Physics UCL, Royal Society Research Fellow; in her own words she says "I study the evolution of immense magnetic structures in the Sun's atmosphere."

She had copies of her new book – 15 Million Degrees - which she was signing but by the time we got there she had run out.....

During the day Lucie tweeted: "It's a rare treat to be able to give a talk about our Sun on such a sunny day." Thanks [@SAGASOnline](#) for the invitation & the solar views.

Melanie Davies, Space Science Communicator; FRAS gave a talk on the Molecular Clouds - Giants in Space: 'scattered throughout the interstellar medium – the space between stars – giant molecular clouds, comprised primarily of hydrogen, are the reservoir of raw materials from which stars are born.'

Melanie has a very good website: www.creative-space.org.uk which is definitely worth a look.

Melanie gives talks to astronomical societies and although she is based in Hastings – it would be wonderful if we could arrange for her to attend one of our meetings.



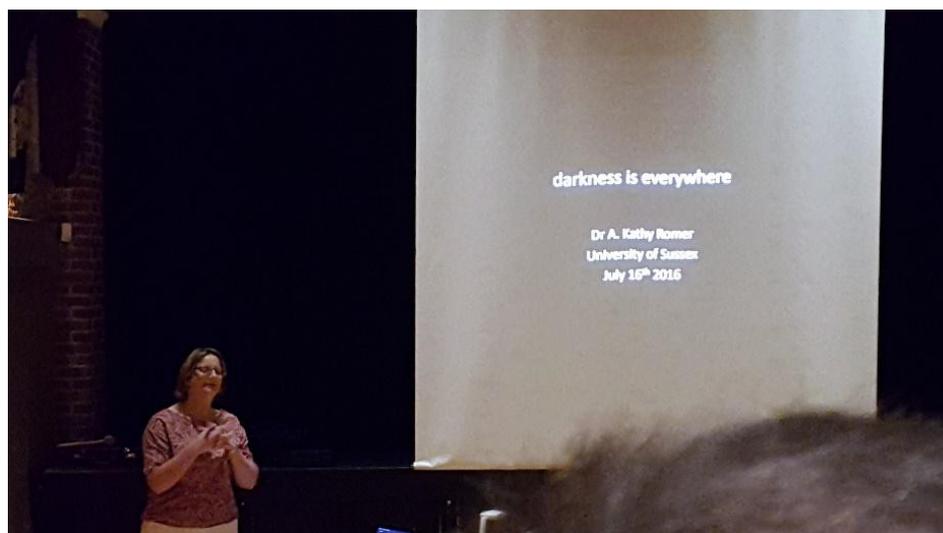
Picture: Melanie's presentation:

Members' Page

SAGAS (Southern Area Group of Astronomical Societies) Summer Convention

Dr Kathy Romer, Reader in Astrophysics, University of Sussex; was next on the agenda and she gave a talk on 'Darkness is everywhere'. Dark energy is a phrase used by physicists to describe a mysterious 'something' that is causing unusual things to happen in the universe.

'The universe is not only expanding, but it is expanding faster and faster as time goes by. What we'd expect is that the expansion would get slower and slower as time goes by, because it has been nearly 14 billion years since the Big Bang.'



Dr Kathy Romer,

Last but not least **Dr David Whitehouse, Science Broadcaster and Writer** talked about communication from the beginning of time in terms of cave paintings to the latest communications in space. David has received many awards over the years for science broadcasting and in 2006 Asteroid 4036 was renamed Asteroid 4036 Whitehouse in recognition of his outstanding contributions to science and the media – what an amazing honour!!



Dr David Whitehouse

We had a truly amazing day and met some wonderful people from many astronomy societies around the country as well as a lovely weekend in Eastbourne and Brighton.

Shela Tomkins

Did You Know ?

HOW COMETS HELPED START LIFE ON EARTH

The Rosetta spacecraft blasted off from Earth 12 years ago. Rosetta has been orbiting the comet 67P/Churyumov-Gerasimenko since August 2014, after a 4 billion mile journey through space.

Rosetta landed a probe, called Philae, on the comet in November 2014 (a feat compared to a fly landing on a bullet). Philae was meant to make an analysis of the comet's gases but after bouncing several times the probe finally landed in the shade of a cliff meaning its solar panels could not power its instruments and its job could not be done.



Philae Probe. Credit : ESA/ATG medialab



Liftoff Ariane 5 G+ on 2 March 2004 carrying Rosetta. Credit: ESA/CNES/ARIANESPACE-Service Optique CSG, 2004

However, according to results published in the journal *Science Advances* dated 27th May 2016 the Rosetta craft has confirmed scientists' beliefs that comets have “seeded” planets with the raw ingredients of life. Instruments aboard Rosetta have detected glycine and phosphorus in the dusty envelope around the core of comet 67P/Churyumov-Gerasimenko. This provides support that comets delivered key molecules for prebiotic chemistry throughout the Solar System - in particular early Earth.



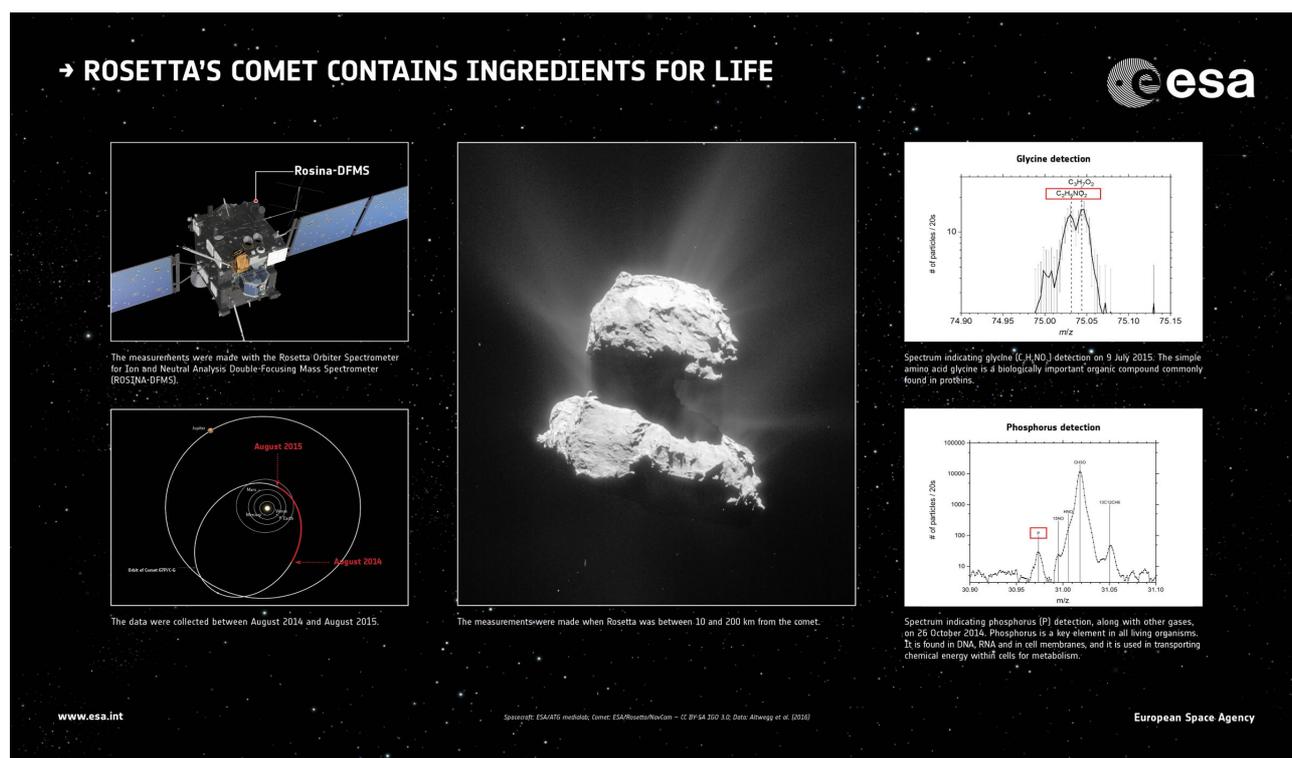
Comet 67P/ Churyumov-Gerasimenko. Credit : ESA/Rosetta/NAVCAM

Did You Know ?

HOW COMETS HELPED START LIFE ON EARTH

Glycine was found in the gaseous “coma” around the comet and is the smallest of 20 amino acids that link in chains to create proteins, the molecules that are fundamental to the structure and function of living cells. Phosphorus was also found in the comet's gaseous “coma”.

Phosphorus is a mineral used in the body to make phosphate which is vital to the structure of DNA, as well as cell membranes, muscles, nerves and bones.



Comet: ESA/Rosetta/NavCam – CC BY-SA IGO 3.0; data: Altwegg et al. (2016)

Credit: Spacecraft: ESA/ATG medialab;

The new evidence came from Rosina the Rosetta Orbiter Spectrometer for Ion and Neutral Analysis. This instrument is designed to “sniff” the gassy atmosphere around the comet. Rosina has the first evidence that comets contain chemicals sufficient to build life.

Dr. Matt Taylor, Rosetta's British project scientist said “The multitude of organic molecules already identified by Rosina, now joined by the exciting confirmation of fundamental ingredients like glycine and phosphorus, confirms our idea that comets have the potential to deliver key molecules for prebiotic chemistry.

This demonstrated that comets are reservoirs of primitive material in the Solar System and vessels that could have transported these vital ingredients to Earth and is one of the key goals of the Rosetta mission. We are delighted with this result.”

Janet Mc Bride

Junior Astronomers' Club (JAC & Gill)

Welcome Home, Tim!

Major Tim Peake returned safely home to Earth on Saturday 18th June 2016 after exactly 26 weeks 3 days 23 hours 11 minutes and 50 seconds in Space.

The journey home went exactly to plan right up until touch down when the Soyuz landed with a bump on its side! To watch the landing, you can find the clip on the Principia website at :-
<https://principia.org.uk/>



Tim said he missed the rain, so we ordered some specially at West Bay Cafe on the day of his return! We also had a special “Welcome Home, Tim!” party to celebrate his safe return! We had fruit salad rockets on skewers and planet cup cakes as well as Star crisps and an assortment of Space themed sweets! What a shame Tim couldn't be there in person to enjoy them but I'm sure he was happy to have a beer and a pizza instead, which was what he missed the most while he was away!



It's official!!!

Now that Tim Peake has returned to Earth, he has finally revealed the results of the UK Space Agency Science experiment... the Rocket Seeds which came from on board the International Space Station were in the....

BLUE PACKET!

The video clip of Tim offering the Rocket Seed Science challenge to the children of the UK was re-released on 22nd June 2016 finally showing the end of the broadcast which revealed the long awaited results. Before he went into Space, he flipped a coin to decide which packet the Space seeds would go into...heads would be red...tails would be blue! Then he kept the secret to himself for over six months until his return to Earth!!!

If you don't believe us, you can find the clip on the RHS website to see for yourself!

<https://schoolgardening.rhs.org.uk/News/News-results/National/2016/June/Tim-Peake-Space-Seed-Reveal>

In the meantime, JAC and Gill are still trying to nurture the little shoots but although they have travelled hundreds of miles into Space ...and back... I'm afraid the ones that have survived haven't travelled very well around Thanet and are looking a bit tired!

So they have been put into retirement in my Mum's conservatory and she is now nursing them back to full health...just in time to be eaten with a tasty salad!!!

[Your really not supposed to eat them!!! ED]

Rest in Peace, Little Rocket Seeds! You've done your duty for mankind!

Gill Palmer.

Adult Word Search

CASSIOPEIA
MARS
METEORIDS
ROSETTA

COMET
METEOR
PERSEID
SATURN

CONSTELLATION
METEORITE
RADIANT
SHOWER

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

Danny.

Junior Word Search

BLUE COMET MARS
METEOR PACKET PERSEID
RADIANT SATURN

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

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 !

Danny.

Members' 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

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We will be adding to this list for 2015 and 2016 newsletters when time is available.

The list will be published at the end of the newsletter so you can easily identify where articles were published.

The Index will also be published on the newsletter page of the website.