

Thanet Astronomy Group

Astronomy for Everyone in Plain English

NEWSLETTER

December 2014



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

Minimum Donation value is at the discretion of the Executive committee.

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About the Cover Picture



Picture by Stellarium

Cygnus (The Swan) Looking West 6 Dec 2014 8pm

This is a picture of the constellation of Cygnus the Swan taken using Stellarium using the single constellation mode.

Over the next few months we will be looking at some of the most amazing constellations available to us in the northern hemisphere, starting with Cygnus. The name Cygnus is derived from the Latinized Greek word (*signas*) for swan.

Cygnus is visible most of the year, but is at its highest in the sky in September around the 10th and at its lowest around February 24th.

This is an easy constellation to identify because the tail star of the swan, Deneb is the 19th brightest star in the sky and forms one of the three points of *The Summer Triangle*. The other two stars being Vega (the 5th brightest star) and Altair (the 12th brightest star). So it's bright enough to be seen through even bad light pollution, especially when you have Vega and Altair to help locate it.

Cygnus is an interesting constellation because there is so much to see within it when you have even a modest telescope. The star Albireo – Beta Cygni is a binary star system and one of the most loved among amateur astronomers because of its contrasting colours. The main star is an orange giant. Magnitude 3.1. Its companion is a blue/green star. Magnitude 5.1. There are also several Nebula in Cygnus, The North American Nebula, The Pelican Nebula, The Veil Nebula and The Crescent Nebula.



The North American Nebula

The Pelican Nebula

The Veil Nebula

There are several other objects in and around the Constellation including, The Fireworks Galaxy, The Cygnus X1 System, The Summer Triangle and The Milky Way.

Danny Day.

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	Carol Butt Email : butt.simon@gmail.com	07583 332 020
Library	Janet McBride	01227 364 092
Web Site	Danny Day	01843 228 904

Member's Meeting Dates and Times

Thanet Astronomy Group **Member's Meetings** **Dates and Times**

3rd December 2014 at 7.30pm

7th January 2015 at 7.30pm

4th February 2015 at 7.30pm

4th March 2015 at 7.30pm

1st April 2015 at 7.30pm

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

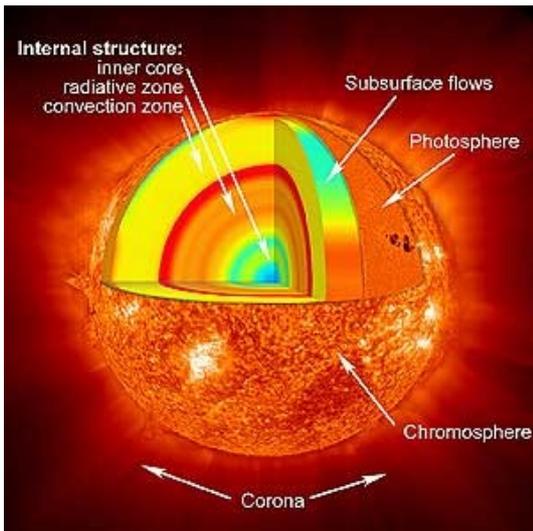
All Member's meetings will be held at the :-

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

What we did last month

Back in mid October we received a request from Stacey Wood of the Osprey Cub Pack to help them with their Astronomy Badge. The Osprey Cub pack meet at Bearsted Scout Group headquarters in Maidstone every Tuesday between 6.15pm and 8pm and they had pencilled in the evening of 18th November to teach the cubs for the badge.

Having checked our diary was clear that night we accepted their invitation. Stacy had seen our web site and noticed we were very active in supporting the community in the field of astronomy, including the many Scouting and Guiding packs we have helped.



We offered her whatever support was needed from a little advice to managing the subject from start to finish. Because the pack leaders have so many badges on an extremely wide range of subjects, it is impossible for them to be the 'expert' in all of the subjects so they are happy to accept all the help they are offered. We said we had a big screen presentation that covered the whole badge and all of its requirements and we could quiz the cubs at the end to ensure they had been listening.

When we arrived there were about 22 cubs most from the Osprey pack but some from the other smaller pack that meet at the same building on another night. We set up the equipment and started the evening with the presentation. The cubs were

very interested with loads of questions as we progressed through the first half of the presentation.

At half time we stopped for a drink and some questions from us, this time the cubs had the answers! They had been listening and had learnt almost everything in the first half.

After the tea break we worked through the second half, with loads more questions from the cubs. Then it was our turn to ask the cubs the remaining questions to cover all the requirements for their badge. All the answers were there with most of the cubs wanting to answer each question.

We all agreed that they all deserved their badges !

Well done Osprey Cub Pack !

To gain this badge, The 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.



Danny Day.

Junior Members Page

Last year, for Christmas I got a Celestron 114 telescope to use for astronomy.

For a couple of months I didn't know how to use it so my granddad phoned Danny at Thanet Astronomy Group and made enquiries about coming to West Bay on a Saturday afternoon.



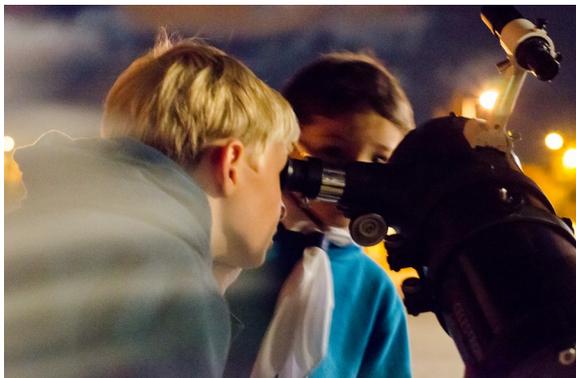
George at a Saturday meeting

My granddad took me down on the Saturday and Danny showed us both how to use the telescope. Later on, we both knew how to use the telescope and a few weeks later we both became members of Thanet Astronomy Group.

My granddad has now bought his own telescope and brings me regularly on the Saturday.

I was the first member of the Junior Astronomy Group and helped to decide to call our meetings JAC and Gill. I go almost every week, so they asked me to be the Junior Chairman.

Our first Stargazing Night was during my Easter holidays in April 2014 and I have been to many more during this year as well as looking in my back garden.



George with his Celestron 114 telescope helping the Beavers with their astronomy badge

We even hunted for shooting stars in the Summer holidays! I have also helped Thanet Astronomy Group at a Beaver Camp Sleepover talk and can now tell others all about my telescope and astronomy facts.

It was a great Christmas present to have...so if you ask Santa nicely... (and you have been good all year)...he may bring you one too for this Christmas! :)>

George Harvey.

Thanet Astronomy Group Library

<u>Titles</u>	<u>Authors</u>
A Yearbook of Astronomy 2006	Patrick Moore
A field guide to the Stars and Planets	Donald Menzel
Astronomy for Amateurs	James Muirden
Astro-Photography for the Amateur	Michael Covington
Atlas of the Universe (Old Copy)	Patrick Moore
Cosmos	Carl Sagan
Empire of the Sun – (Planets & Moons of the Solar System)	John Gribbin & Simon Goodwin
Geometrical Optics	C. Curry
Kauffman Universe	Freeman
Observing Earth's Satellites	Desmond King-Hele
Optical Vision Limited catalogues 2013	
Optical Vision Limited catalogues 2014	
Philip's Stargazing with a Telescope	Robin Scagell
Philip's Deep Sky Observer's Guide	Neil Born
Planets	Carl Sagan
Practical Amateur Astronomer	Patrick Moore
Revolution in Optics	S. Tolansky
Skywatching	David Levy
The Constellations	Lloyd Motz & Carol Nathanson
The Exploding Universe	Nigel Henbest
The Origin of the Earth	W.M. Smart
The Universe	Robin Kerrod
Voyage through the Universe (Set of 5 Books) :- Frontiers of Time Galaxies Stars The Cosmos The Far Planets	
Wonders of the Universe	Brian Cox

Danny's Library

Titles

A Little Course in Astronomy
Everything you need to know about -
everything you need to know about -
the Universe
Mars – The inside story of the Red Planet

Origins – Our Place in Hubble's Universe

The Natural History of the Universe
The Planets (TV Series)

The Solar System
Simple Stargazing

Authors

John E. Thompson

Chris Cooper
Heather Couper &
Nigel Henbest
John Gribbin &
Simon Goodwin
Colin A. Ronan
Heather Couper &
Nigel Henbest
Chris Oxlade
Anton Vamplew

Gill's Library

Titles

100 Things to Spot in the Night Sky
1001 Wonders of the Universe
All About Space 10th Issue
Eclipse of the Sun
Philip's Guide to the Night Sky x2
Philip's Stargazing 2013

Sun, Stars and Planets Q&A
The Practical Astronomer

The Sky at Night 100th Issue
The STAR Book
The Young Astronomer

Authors

Usborne Cards
Piers Bizony
(Magazine Feb. 2013)
Steve Parker
Patrick Moore
Heather Couper &
Nigel Henbest
Tom Stacy
Will Gater &
Anton Vamplew
(Magazine Sept. 2013)
Peter Grego
Harry Ford

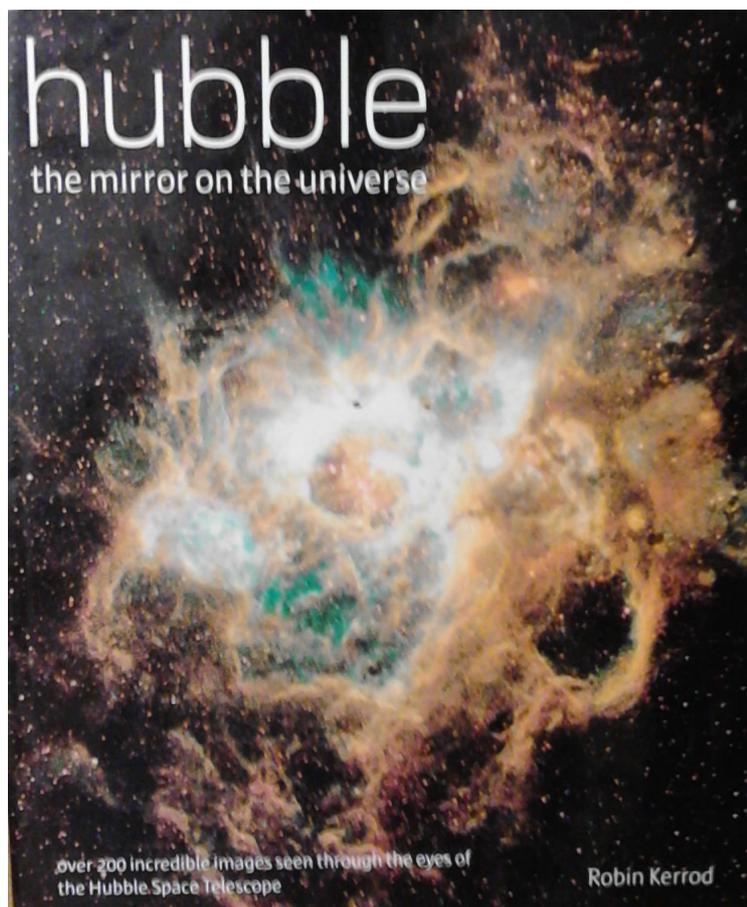
Book review

Hubble – the mirror on the universe by Robin Kerrod.

This book is full of incredible images of objects in space taken by the Hubble Space Telescope. There are over 200 of them, all in colour, some of them are double page photos.

There are wonderful photos of stars, old and new, galaxies, parts of the universe, clusters, planets, the moon and the sun. All of these photos are accompanied by detailed descriptions and explanations in nice understandable words (not too many scientific words!).

As I read the details I found myself getting very excited and wanted to rush out and look at the sky to see what I could see. I found it best to read just a few pages at a time in order to take it all in.



Another thing I liked about the book was the fact that it did not just concentrate on stars, planets, etc. in space. There was quite a lot of information about telescopes, how they are made in order to cope with being sent out into space and some of the technology involved in their construction.

This is a book that should be on every astronomer's library shelf in my opinion. I know if it was on mine I would be returning to it over and over again.

Janet McBride

What's in the sky this month

What to see This weekend 6 / 7th December 2014

Stars (Polaris, Deneb, Errai, Alfirk, Alderamin, Zeta Cephei, Iota Cephei, Garnet Star)

Constellation (Cepheus)

Meteor shower (Geminids)

At 8pm

Look North 0° on your compass up 52° above the horizon you will find the Star **Polaris** (some times called the Pole Star or North Star), This is the star that the enchant mariners used to show them which way was north. If you face this star you are looking north.

Look a little to the west at 289° and a little lower at 46° and you will see the bright star **Deneb**, the tail of Cygnus the Swan. The name *Deneb* is derived from *dhaneb*, the Arabic word for "tail".

When you are looking North, Directly right of the line between **Polaris** and **Deneb** is the **Constellation Cepheus**, best known for its resemblance of a house with a pointy roof. It contains about 10 stars visible by eye.

Look to the north at 350° and up at 62°. At the tip of the roof of **Cepheus** you will find the star **Errai**, 46 light years away. In 3.5 thousand years it will replace Polaris as the pole star.

Look west a little to 328° and slightly down at 58°. You will see the star **Alfirk** at the top right corner of the house. **Alfirk** is 685 light years away.

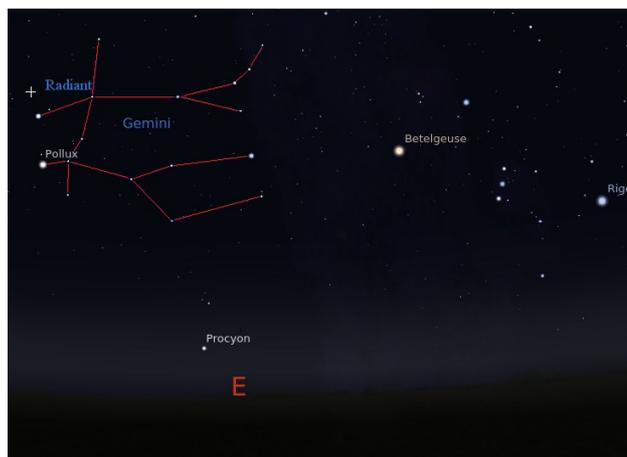
Look a little more to the west 312° and up at 58°. You will find **Alderamin**, the bottom right corner of the house. **Alderamin** is 49 light years away. This star is 3.2 million kms in diameter, over twice the Sun's diameter. **Alderamin** rotates once every 12 hours (60 times faster than our Sun). In 7500 years it will be the Pole Star.

Look at 302° and up to 64°. You will find **Zeta Cephei** the bottom left corner of the house. **Zeta Cephei** is an Eclipsing Binary System, (We all know what a *Solar Eclipse* is, an *Eclipsing Binary System*, is where there are two Suns and one Eclipses or passes in front of the other) the star system **Zeta Cephei** is 836 light years distant.

Look right to 323° and down to 67°. You will find **Iota Cephei**, the top left corner of the house. **Iota Cephei** is 115 light years away. This completes the upside down house shape.



The Constellation Cepheus



Geminids Radiant is in Gemini

Depending on the weather we would like to hold another Meteor watch evening. There will be more info on the web site on the news and diary pages or call us for more info nearer the date.

The Geminids Meteor Shower runs from the 7th-16th December. The peak nights are the 13th and 14th December. There could be up to 120 meteors per hour on the peak nights. The object responsible is the Asteroid 3200 Phaethon, which orbits the Sun every 16 months.

George Ward.

Member's Page

A Visit to The Old Tartu Observatory Estonia.

A few weeks ago I visited Estonia, and Tartu in particular to catch up with some old friends. Tallinn the capital is a very popular tourist city, large cruise ships visit throughout the summer and it is a very popular for "stag" and "hen" weekends. Tartu is a small university town about a two and half hour coach journey from Tallinn Airport.

My hosts suggested we visited some of the most popular / Historic parts of the town, one of which was the old observatory, part of a complex of historical academic buildings of the University of Tartu. It was completed in 1810, designed by Johann Krause.



In 1834 the observatory received a brand new telescope "The Great Fraunhofer Refractor. The original dome did not have sufficient space to accommodate the instrument. However, the tower was re-modelled and the telescope installed.

Tartu Old Observatory was used as an astronomical research facility until 1964, when a new facility was built at Toravere, some 20km south of Tartu. The Observatory became a meeting place for Tartu's astronomy lovers. After extensive restoration in 2009/10, it was opened as a museum in the spring of 2011.

The observatory is famous for the fact that it represents a point on the Struve Geodetic Arc which extends from the Arctic Ocean to the Black Sea. The Arc is a 2822km segment of the Tartu meridian measured in the years 1816-1852 to provide a means of establishing the exact size and shape of the Earth. The East hall of the museum is dedicated to scientific measurements related to the Earth and various celestial bodies.



The Great Fraunhofer Refractor was used to establish the distance of a star from the Solar system for the first time. The refractor is still fully functional and could still be used for observation if needed.

David Bill November 2014

Telescope Review

I want to buy an Astronomical Telescope. What one do I get please?

Sky-Watcher Explorer 130M

After introducing myself to Danny and George W. about 2 years ago the above title was my first question. When they had finished smiling (I hasten to add NOT laughing) they asked me what I wanted to look at? I said the sky and what's up there.

That was the start for me of a long process to acquire my telescope. I was asked to think about what I want to look at, e.g. the planets, stars, deep space etc. When I thought I had got the answer there was always a question. Did I want to do this or that with the scope. As my answer was always a yes my choice of scope needed to change. What became apparent to me was the need for a compromise on my part unless I went for a very expensive scope. Since my funds were limited I had to try and find a scope that would do at least 2 jobs reasonable well. I wanted to look at planets and stars, also to fit a camera eventually.

Not that I understand what Focal Ratios $f/5$ or $f/9$ really mean, but I was told to photograph through the scope it should ideally be $f/5$. To look at stars $f/9$ would be best, to a layperson like me the explanation I was given didn't mean much but I accepted it. Now I started to search the internet for telescopes, I found the Explorer-130M Newtonian Reflector by Sky-Watcher with a 130mm diameter mirror ($D=130\text{mm}$) and a Focal Length of 900mm ($F=900$). [The 'M' in 130M means it comes with Motor Drive so it can follow the stars.]

By dividing the Focal Length of the mirror (900mm) by its diameter (130mm) you get the Focal Ratio, which is 6.9 usually written $f/6.9$. This just happens to be as near as damn it half way between $f/5$ and $f/9$, My Compromise!!!

It didn't end there, having got approval for my choice the next question was from whom? There are plenty of web sites that can supply the Sky-Watcher that I wanted but with advice from Danny and actually seeing a brand new one, that one of our members got for Christmas my mind was made up.

We can tell you the name of a supplier whose prices are very competitive and delivery charges are extremely low. Also included was a battery powered tracking device (excluding batteries). My purchase shown on the left with the normal optics and a 2X Barlow at the beginning of January 2014 was under £170 delivered.



Finally my quest took me the best part of 11 months from my first question to receipt of the scope. My thanks to Danny and George for their help in me achieving my goal.

George Cozens

This telescope is a very good value for the price, all purpose telescope. It is a 'jack of all trades' but 'master of none'. All in all an excellent piece of equipment to learn the basics of the art of astronomy. It has been awarded **Sky at Night Group Test WINNER**



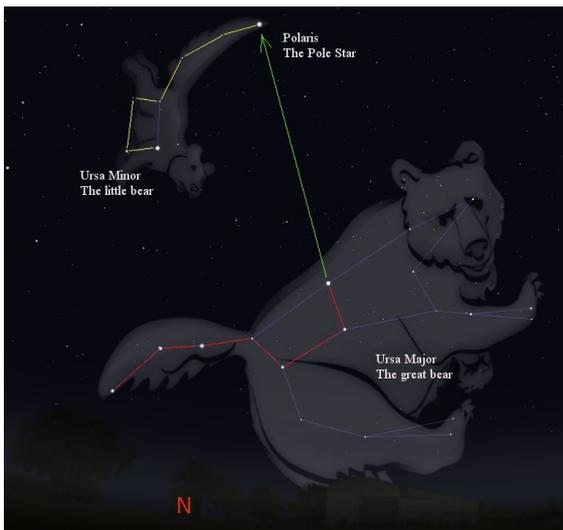
Junior Astronomers Club (JAC & Gill)

The word is spreading far and wide...

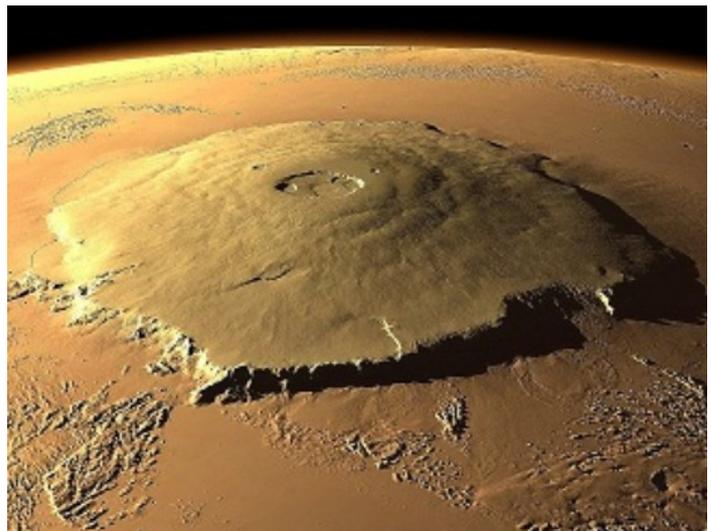
Thanet Astronomy Group has always taken great pride in helping people of all ages to learn about astronomy in plain English! Therefore, you can imagine how delighted we were when we were approached recently by a Scout Leader from Maidstone who had found our website on the Internet and asked us to help her Cub Pack earn their Astronomy Badges. They meet every Tuesday at Bearsted Scout Hut, so we were hoping for some clear, dark skies as it is in a fairly rural area.

We arrived last Tuesday evening to find a pack of 26 very lively boys, led by Cub Leader (*Baloo*). They were more than ready to be transported into Space to learn about Astronomy which, according to them, was all about the Earth! But, by the end of the evening, they all knew that Astronomy is really about anything in Space that is **not** on the Earth e.g. the Moon, Stars, Constellations, Galaxies and Planets.

Although rather chatty, most of their conversations were about the information they were being given during their presentation! They wanted to know if the Seas on the Moon were full of water and how much water might there be on the Moon...how high is the volcano (*Olympus Mons*) on Mars and was it really the biggest in our Solar System...was there really a Great Bear in the sky who could point us to the Pole Star!!!



The Plough Red, Ursa Major Red & Blue, Ursa Minor Yellow.
In Green where to find the Polaris (the pole Star)



Olympus Mons. The largest Volcano in the Solar System
624 km (374 mi) in diameter. 25 km (16 mi) high,
A caldera 80 km (50 mi) wide is located at the summit

The weather was against us on the night and it was too cloudy to actually view the Great Bear and the Pole Star outside! So we used our planetarium software Stellarium to take them on a tour around the sky. They also got to use the telescopes indoors having a real close up look at the star in their scout logo at the far back of their hut...!



However, they had all their questions answered and achieved all the requirements they needed to earn their badges, with a bit of help from Stellarium, so went home star struck and happy!

Reach for the Stars Junior Astronomers!

Gill Palmer.

Executive Committee Messages

Getting our group known

With the winter getting ever nearer things are beginning to slow down a bit September was a mad month with more bookings than any other month so we have had some time to sit back and do some planning this month.

We had one booking in November and it holds the record for distance that word of Thanet Astronomy Group has spread! We were booked by a cubs group in Maidstone, see the what we did last month page for details.

These events are very important to the group because they raise the level of public awareness that our group exists.

Your Newsletter

Welcome to Issue 003 of your newsletter, we hope you find it interesting and helpful.

This month we have changed the format of the single sided version of the newsletter it is now a normal A4 document. This is so that we can use larger print and larger pictures. We hope this is more useful to people (like me) that can't read the A5 booklet version.

We will email the A4 version to all members that we have an Email address for.

Both versions will remain available for download on the web site as detailed below.

If anyone has anything they are looking for, want to sell or even give to a good home, remember there is a for sale and wanted page on the back of the news letter. If it proves to be popular we will add a for sale and wanted page on the web site.

Remember this is your news letter, let us know what sort of articles you would like to see in it.

The Web Site

We have added a new item to the web site News page with details on the up coming Geminid Meteor Shower 7th – 16th December, Peak night 13th / 14th December.

We are hoping to arrange a viewing night depending on the weather.

TAG & FAS Newsletter Pages. Go to the Members page and these two new pages will appear in the links on the left under the Members link. You will be able to view, download and print the Newsletters.

The FAS Newsletter is 21 pages of A4
The TAG Newsletter is 12 pages of A5

(-: Wishing you all Clear Skies :-)

Danny, George, Gill.

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