Heather Couper Lecture

Heather Couper will be giving a lecture entitled "Darkness at Noon: Secrets of the Sun and its eclipses". In fact she will be giving her talk twice, once as a public lecture on Monday 9th August and again to the NAM99 delegates on Tuesday 10th. Both talks will be at Beau Sejour, starting at 8pm. The lecture will probably be free but tickets will be required.

NAM99 Conference Volunteers needed

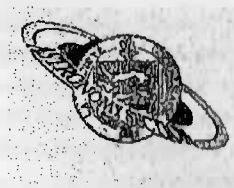
The Nam99 Conference is taking place at Beau Sejour from 9 - 13 August. We need volunteers to man the Section's stand during the week (not the 11th). Please let Jessica Harris or Debby Quertier know if you can assist. It will be a good opportunity to see the conference in action.

Eclipse Roundup

On Tuesday 21st September, starting at 8 pm, we plan to have an Eclipse Roundup evening at the Observatory to compare eclipse observations, look at photos, news coverage etc. David Le Conte would be particularly interested in finding out what was observed from different parts of Guernsey, comparing the differences between what was seen from L'Ancresse, town and Jerbourg for example. All are welcome.

Aurigny ticket to Alderney

Jessica Harris has a spare Aurigny ticket for Alderney on August 11th. Contact Jessica if interested.



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Copy deadline for next publication is 15th September

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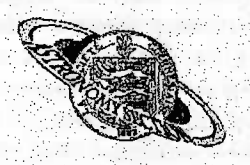
Sagittarius

The Newsletter of the Astronomy Section of La Société Guernesiaise

July - September 1999



Forthcoming events

Annual Clean-up Day
Saturday, 17th July
9 am onwards at the Observatory

Lecture by Heather Couper
Monday, 9thAugust
8 pm at Beau sejour

Solar Eclipse
Wednesday, 11th August
10.15 am to 12.16 pm

Eclipse Roundup
Tuesday, 21st September
8 pm at the Observatory

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Stories in the Stars
Eclipse preparations

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Centre inserts

Star chart
Moon phases
Sunset and sunrise times
Interesting objects week-by-week

New Section Secretaries

At the Special Business Meeting on April 27th Jessica Harris and Debby Quertier agreed to take on the job of Section Secretary jointly. Since then both have been extremely busy in support of the Section organising events to raise funds in advance of the eclipse as well as carrying out the more routine functions of the Section Secretary. The Section is fortunate to have their enthusiasm and commitment and we wish them well for the rest of their term.

Eclipse Exhibition Opening

On Thursday, 17th June 1999 Patrick Moore officially opened the Eclipse Exhibition at Candie Museum. The opening was well attended with Press, TV and Radio there. Patrick opened the exhibition, and officially named the Lukis room. The star attraction was a piece of moon rock, on loan from NASA. The exhibition itself is equipped with computers to visit various eclipse websites and there are computer image of the path of totality of August's and other eclipses. There is a section devoted to Warren de le Rue and his work. Everything you would want to know about our sun and eclipses is probably answered in the exhibition. It is well worth a visit.

Patrick Moore seemed to enjoy the opening, which was prior to his talk at Beau Sejour, and spoke to the media, appearing in the next day's Press and on Channel Television. Jessica Harris spoke to Channel Television and appeared in the news item about the museum and was able to plug our being at Candie the following the Sunday. The televison people were interested to hear about our fundraising for the telescope and said they will give us some coverage when we finally acquire it.

Patrick Moore's Talk at Beau Sejour

Several members joined the full house at Beau Sejour on the 17th June to enjoy Patrick Moore's talk entitled "The Great Universe". He spoke about the hugeness of space and time, we are looking back in time too before we existed, from early astronomical observatories like Stonehenge to Galileo first using a telescope and up to date with Hubble Space Telescope, which is looking further into space than ever before.

He explained how our sun shone due to nuclear reactions at it's core and that it "burned" hydrogen at a rate of 4 million tonnes per second. At this point Patrick spoke about the eclipse and warned about the potential dangers of looking directly at the sun. He then went into detail about the lives of stars, from how they formed in nebulae such as M42 to their often spectacular deaths. He gave examples of a "nearly" star such as a brown dwarf, how our sun will turn into a red giant and then planetary nebula, like M57, with a white dwarf left at the centre. Examples were given of supernova and the remnants they left behind with a pulsar at the centre, such as M1, the Crab Nebula in Taurus which was a result of a supernova explosion in 1054. The most massive stars finished their days as black holes.

He then left our galaxy and described the Globular Clusters such as M13 and the lovely galaxy M31, the nearest to us at a distance of over 2 million light years away. He spoke of how stars were measured using parallax, and Cepheid Variables for those further away. The distance of the farthest galaxies were calculated by measuring their red-shift. The most distant objects are Quasars at over 10,000,000,000 light years away. the talk was illustrated all the way with beautiful slides taken by various telescopes and he also included some artists impressions, in particular there was a lovely painting of what the sky would like on a planet near to a globular cluster.

He talked about how the universe started from the Big Bang about 12,000,000,000 years ago and it's expansion is dependent upon how much matter there is in it, which is not known. Patrick spoke about the possibility of life elsewhere and travel further into space. The distances are too great for travel as we know it but science fiction has become science fact before, so who knows? Patrick has met Orville Wright, Yuri Gregarin and Neil Armstrong. These three men, who were all part of milestones in flight and space exploration and could have met, (which they didn't) but it shows what a lot has been achieved this century. The future will bring a man on Mars and maybe a community in space.

This has been a century of Discovery and a Century of Consolidation. During the talk we travelled through space and back in time. It was a most entertaining talk delivered in Patrick's inimitable style and enjoyed by all those who attended.

Debby Quertier

Annual Clean-Up Day

It was recently decided that Saturday July 17th will be our annual clean-up day. There are plenty of jobs to do. Things have become a little neglected as we have all been so busy packing eclipse viewers and fundraising. One job we need to tackle is the shed. La Société will be using it to store some of their books and Griff Caldwell will be arranging for the electrics to be sorted out and shelves put up. The shed is currently full of allsorts and if any member has anything stored there can you please let us know as it will probably need to be moved. Please come along and help from 9 am onwards on Saturday 17th July. It doesn't matter how long, or little, you can stay for. All help will be appreciated and needed.

La Haye du Puits - 20th June

On Sunday, 20th June Geoff Falla, Lawrence Guilbert and I ran an eclipse stall at La Haye du Puits open day, which was in aid of St Saviour's church. We sold eclipse viewers, David Le Conte's book about the eclipse and eclipse stamp first day covers. It was a sunny afternoon although a bit windy and it was nice to see so many people turn up to view the beautiful gardens of La Haye du Puits. Lots of people showed an interest in the eclipse and we were asked plenty of questions. Thank you to Robert Hitchins, for allowing us to be in his lovely garden, Lily Mauger from St Saviour's church and the ladies who looked after us with tea and cakes.

Roger Chandler

Mark's Mega Challenge Quiz

by Mark Humphrys

It seems that quite a few people attempted my quiz in the last edition of Sagittarius so I thought I would do another one. Only this time bigger, with a hundred questions to test your knowledge of all aspects of astronomy from telescope making, history of, famous astronomers, space exploration and astrophysics etc. Also its a little more difficult, perhaps.

But to introduce an element of competition I am offering a £25 book token to the person who gets the most correct answers. If two or more people get all the answers, or the same number correct, then their names will be drawn from a hat. Put your answers on a sheet of paper (with your name etc) and send them to Peter Langford and he will forward them to me, here in Norfolk, once all the answers are in. The deadline for entries is 4th September. I'll let him know who won and he can present the book token to the Winner.

Just to give you some help, most of the answers can be found in either 'Astronomy Now', 'Sky and Telescope' or 'Astronomy' covering the last 10 years (that's only 360 magazines!!!)....

Good Luck!!!

1. The Very Large Telescope in Chile consists of 4 telescopes each 8m in diameter. What are the names of the 4 telescopes?
2. In what film did Bruce Willis save the Earth from a lump of rock the size of Texas?
3. Brian Marsden works where and does what?
4. Why was there world wide consternation when Brian Marsden added an exclamation mark in one of his IAU circulars?
5. The formula Rs = 2.59M gives what?
6. What is the exact length of a sidereal day?
7. Who was the subject of a lawsuit by Edmund Halley and won?
8. What is so special about the Pistol Star?
9. Where are you likely to find the "coathanger" and what is it?
10. Which journal, newsletter or magazine recently admitted to a mistake which has taken 56 years to come to light?
11. In what month are you likely to see the Geminids?
12. In Nigeria certain tribes think that a particular apparition in the sky was the cause of the Biafran Civil War in the late sixties. What was this apparition?
13. NEO stands for what?
14. S type stars have a similar temperature to M type stars but what in their spectra differentiates them?
15. What is the Earth's escape velocity? (In Km per second)
16. Dark matter is thought to make up a large portion of the universe's mass, so where will you find Dark Currents?
17. Which is the most volcanically active body in the Solar System?
18. What is the name given to the sequence of solar or lunar eclipses that is repeated every 18 years or so?

19. Where would you find a Serrurier Truss?
20. When the first Ariane 5 blew up what was lost?
21. Which old age pensioner got a second chance recently?
22. Triton is unusual - why?
23. And Titan is another unusual moon - why?
24. Where are you likely to find MERLIN other than in King Arthur's day? Who or What is it?
25. Where is O'Neils Bridge and what did its discovery lead to?
26. What was the name given to the second rock visited by Sojourner recently?
27. What distinguishes a type II supernova?
28. Deepspace 4 is designed to do what?
29. Deepspace 1 is on its way to an asteroid, what is special about its engine?
30. If an object is moving away from you is the wavelength of its light going to be stretched or compressed?
31. When you plot stellar luminosity against temperature what graph is produced?
32. When an electron spirals around a magnetic field it produces what?
33. IC434 has a famous object in it - what is it?
34. Where are you likely to find COAA and what does it stand for?
35. On what part of the Moon did Apollo 18 land?
36. What name is given to a filter that will transmit light at a wavelength of 6563 angstroms and what kind of observations would you likely be doing if you used this type of filter?
37. Which major observatory can be found in the French Pyrenees?
38. Jack Wall is a member of the Crayford Manor House Astronomical Society. What piece of equipment did he design that has gained world wide recognition?
39. The Watford Gap is a motor way service station so what is the Kirkwood Gaps?
40. He discovered Helium, founded the journal Nature, discovered the chromosphere of the Sun and in his spare time had seven sons and two daughters. Who was he?
41. What is the only spacecraft to have flown over the Sun's polar regions?
42. Andrew Lloyd Webber has something in common with Terry Platt, what is it?
43. How hot is a B-type star?
44. If you talked about the stag, or the Wain, or a leg of beef or a parrot what constellation would you be discussing?
45. Results from the Galileo spacecraft indicate that Europa may have what?
46. Sobieski's shield was named in honour of the Polish King, John III Sobrieski, to what are we talking about?
47. NGC3587 is a hoot to find, especially in small scopes. What and where is it?
48. Where are you likely to find KBO's?
49. M20 is a combination reflection/emission nebula, what is it commonly called?
50. What is the difference between an emission nebula and a reflection nebula?
51. What birds cost NASA millions of dollars in 1995, and how?
52. Once upon a time a birdwatcher called Hubble spotted some eggs in an eagle's nest. What are we talking about?
53. What did Eratosthenes do in 200BC?
54. What is the phrase "Old Moon in the New Moon's Arms" referring to?

55. Fragments A to W made a big impact, what did they come from?
56. When we talk of the Paschen, Lyman, Balmer and Pfund series what are we referring to?
57. When would you be using the Danjon scale?
58. Where will you find the Porter Turret Telescope and what is so special about the site?
59. If you were looking at MEL111 what would you be looking at?
60. Which person was the first to have their ashes taken in space?
61. In mythology what constellation is used by the Herdsman to drive the bears around the pole?
62. A student, J B Burnell, detected strange signals in some radio data, it was initially thought to be LGMs. What are LGMs and what did the signal turn out to be?
63. If you were using a distant VHF FM radio station and the technique of forward scattering, what observations are you likely to be making?
64. Will Hay was a comic actor in the thirties, what astronomical discovery did he make?
65. If the Earth's axial tilt is 23.5 degrees what is the biggest tilt in the Solar System?
66. An optical system with an even number of reflections gives a reversed or mirror image. True or false?
67. M84 and M86 lie close to each other in Virgo, which one is blue shifted?
68. If you were using the formula: $m = 2.7 + 5 \log D$, where D is the telescope aperature in mm, what would you be trying to determine?
69. In astrology a "cusp" is any division between houses or signs of the zodiac, what is its astronomical meaning?
70. Inside the Sun how much matter is converted to energy each second?
71. If you miss the Solar Eclipse this year when is the next one visible from the Channel Islands?
72. Meteor Crater in Arizona is about 1,200 metres across. What size of object is thought to have caused it?
73. What woman in 1963 amassed more time in space than the whole of the US astronaut corps.
74. Troposphere, stratosphere, thermosphere, exosphere, what is missing?
75. $P^2 = a^3$ was determined by whom?
76. What is unusual about R Coronae Borealis variable stars?
77. If an Anomalistic year is 365.25964 days in length how long is a Platonic year?
78. How close did Giotto get to Comet Halley (to the nearest hundred Kms will do)?
79. What discovery by the Lunar Prospector caused widespread media discussion?
80. What instrument is used to identify changes in two photographs of an area of sky taken at different times?
81. The Octagon Room was designed by Sir Christopher Wren for using long telescopes. Where will you find this room?
82. What is a Schiefspiegler?
83. Which is the innermost of the two martian moons?
84. At what time scales do the known laws of physics begin to break down, and what is this time called?
85. What is and what would a Porro Prism be used for?
86. NGC 2261 is better known as what?
87. A science fiction comedy show has the same name as a star that has a surface temperature of around 2500 to 5000 kelvin and 0.8 to 0.08 solar masses, what is it?
88. If a moon approaches within the Roche limit of its planet what is likely to happen?
89. Chicxulub is thought to be the site of what?
90. What does the Drake equation try to do?
91. Where will you find the "Mountain of the Boys"?
92. In 1892 a comet was discovered for the first time using photography. Who was the photographer?
93. Acceleration of gravity is about 8.8 metres per second, albedo is 0.76, diameter is 12104 km. What planet are we talking about?
94. What was the name given to the automated rovers sent to the Moon in the 1970's by the Russians?
95. Homestake Mine Astronomical Observatory is 4,850 feet under ground. Why?
96. Which school played a major role in the discovery of the Russian launch sites of the early Sputniks, out doing many of the intelligence services?
97. What telephone system is going to cause problems for radio astronomy?
98. Orion's belt is formed by three stars in a line, where is Orion's Arm?
99. What is "green river" solution and what is it used for?
100. Su Song is noted for what particular astronomical inventions?

Mark Himphrys

THE SUN'S DIAMETER IS 865,000 MILES

THE EARTH'S DIAMETER IS 7,926 MILES

THE MOON'S DIAMETER IS 2,160 MILES

THE EARTH'S DISTANCE FROM THE SUN VARIES FROM 91,400,000 TO 94,600,000 MILES

THE MOON'S DISTANCE FROM THE EARTH VARIES FROM 221,460 MILES TO 252,700 MILES AND ITS ANGULAR DIAMETER VARIES FROM 29'22" TO 33'31"

AN ECLIPSE OF THE SUN IS UNIQUE IN THE SOLAR SYSTEM - IT IS A COINCIDENCE THAT THE SUN AND MOON APPEAR THE SAME SIZE IN THE SKY.

FOR AN ECLIPSE TO OCCUR IN ANY OTHER PLACE IN THE UNIVERSE THERE WOULD HAVE TO BE A PLANET AT A SUITABLE DISTANCE FROM A STAR SO THAT IT GAVE LIGHT AND LIFE AS OUR SUNS DOES. THIS PLANET WOULD NEED TO HAVE A MOON. THIS STAR AND MOON WOULD NEED TO APPEAR THE SAME SIZE IN THE SKY. IT'S QUITE A LONG SHOT.....E.T.WOULD HAVE TO TRAVEL A LONG WAY TO SEE AN ECLIPSE!!!!!!!!!!!!

Guided Telescopes - A Good Night Out

by Paul Gavey

Almost a year ago I treated myself to a new telescope, a Meade 16" Starfinder complete with a JM1 computer. The computer has a 12,000+ object data base. Briefly, what the computer does is tell you what the numbered object is - it's magnitude, location, size and a little about what you should see. After entering a two-star alignment into the computer you then choose the object you wish to observe. Press the guide button and it gives you two read-out numbers on the display. Move the telescope until both the numbers decrease to zero and the object should now be in the eyepiece.

On the 14th May 1999 it was a very clear night so I took my telescope out. It was the first night I managed to use the computer with the telescope. After entering the two-star alignment I was ready to observe. Starting off with an easy one I entered M13, pressed the guide button, moved the telescope until the display went to zero. I then used a low-powered eyepiece, looked through the telescope and there was M13 in the field of view! I then moved onto at least 14 more objects, some of which were faint and quite small. This didn't matter because they were in the field of view each time. I have since been out a couple of times and viewed many more objects with ease. With a set-up like this you are sure to see something new every time. You can spend your time looking at these gems instead of looking for them.

This should give you some idea what to expect from the telescope the Astronomy Section is hoping to buy. This telescope, I believe, has a 64,000+ data base and once set up will also be easy to use. I for one look forward to the day the telescope arrives.

Astronomy and Space - References for further reading

compiled by Geoff Falla

Mars. Detailed profile of the planet Mars. Photos and geology, current and future research plans and primary objectives: the search for evidence of life past or present, understanding the climatic changes on Mars, and surveying the planet's natural resources for the purpose of future exploration. *Sky and Telescope, April 1999*

Ice in the solar System. The apparent widespread presence of ice in the solar system - on Mars, the satellites of the outer planets, in comets, and recent evidence for ice on the Moon and perhaps Mercury. *The Planetary Report, March/April 1999*

Comet Sample Return Mission. Details of the Stardust mission, the first sample return mission since the Soviet Lunar project of the 1960's. Launched in February, the mission plans to rendezvous with Comet Wild 2, returning with samples of cometary material and interstellar dust. *Astronomy and Space, April 1999*

Lunar Landscape. The Clementine mission. The first detailed survey of lunar gravity and mineralogy, and the evidence for ice in the Moon's polar craters. *Modern Astronomer, April 1999*

Royal Greenwich Observatory. Continued history of the Royal Greenwich Observatory, dealing in this part with its move to Herstmonceaux, Sussex. *Modern Astronomer, April 1999*

Quasars. the rise and fall of quasars. Unravelling the mystery of these cosmic powerhouses. *Sky and Telescope, May 1999*

Amateur Astronomer George Alcock. The story of a very remarkable astronomer, who has memorised the exact position of 40,000 stars, allowing him to be the first to discover several comets and novae. *Sky and Telescope, May 1999*

Japan's New Giant Telescope. Japan's new 8.3 metre SUBARU telescope has now joined other major telescopes on Mauna Kea, Hawaii. Technical details, including use of adaptive optics, and first photographs. *Astronomy and Space, May 1999*

Discovery of a Sun-like Star with Planets. Astronomers have confirmed the discovery of a Sun-like star with a system of at least three large planets. The star is Upsilon Andromedae and is visible to the naked eye near the M31 Great spiral Galaxy. *Modern Astronomer, May 1999*

Spaceguard. Details of the search for near-Earth asteroids and the discovery rates to date. *Modern Astronomer, May 1999*

SETI - New Search for Light Signals. The SETI programme - the Search for Extraterrestrial Intelligence - has so far been concentrated on the microwave portion of the electromagnetic spectrum. Details of the search now widening for pulsed signals of laser light. *Sky and Telescope, June 1999*

The Birth of Binary Stars. Evidence indicating that binary stars form during the normal processes of star formation. Results of a survey indicate that about half of all nearby primary stars have at least one companion. *Sky and Telescope, June 1999*

Distances of the Stars. Detailed summary of the Hipparcos satellite mission (1989 - 1993) and several years of data analysis. Satellite designed to measure accurately the positions and proper motions of the stars. *Sky and Telescope, June 1999*

Eclipses and Ancient Annals. Historical accounts of eclipses in the British Isles, the earliest dating back to AD 594. *Astronomy and Space, June 1999*

X-Ray Observatory. The Chandra X-Ray Observatory, due for launch in July into an elliptical orbit taking it well beyond the Van Allen radiation belts. Detailed summary of this project which will help in the understanding of the structure and evolution of the Universe, and questions regarding 'dark matter'. *Astronomy and Space, June 1999*

Stories in the Stars

by Jessica Harris

Ever since I was a very little girl I have been interested in the night sky. I thought the heavens and their twinkling lights, and the patterns that they formed were quite magical (I still do today).

My interest was kindled and the flames then fanned by two people. The first, an uncle (whom some of you will know, Lawrence Guilbert a member of the Section), when he visited my house, he would sometimes tell my two sisters and me about sights in the night sky, and explain what the various shapes signified and where they could be found. I think that the stories were for the benefit of my elder sister, and he probably thought my younger sister and I too small to understand much, but I was listening, and understood enough to want to find out more when I got older. So it was he that first fired my imagination.

So I urge all of you out there with an interest in the stars, please encourage the child in your lives into astronomy with the stories of the stars.

The other person whom I owe my interest in 'star gazing' to was a school master at my secondary school. He was actually a history tutor and my first form teacher. He had a keen interest in astronomy, and kept a map of the night sky pinned to the form-room wall. I was continually hounding him to tell me more about the stars and constellations, and often at break times the poor man sometimes didn't even get a cup of coffee, I always had one more question to ask. Then the bell would ring calling everyone back to classes, but he didn't seem to mind that he had missed recess too much.

I loved to hear the stories attached to the constellation names, and found them every bit as interesting and enjoyable as other fairy stories, such as the ones by Hans Christian Andersen, The Brothers Grimm, CS Lewis, JRR Tolkien, Roald Dahl or Lewis Carroll, to name a few. I always have, and always will, find mythology of any sort absolutely fascinating, especially the Greek and Roman tales, they were such great storytellers. I was captivated by the tales of the gods and goddesses, and thought that the great heroes were so fabulous.

As I have grown older my love of astronomy is still as strong, albeit now leaning towards the more scientific aspect, but those legends and fables still give me great pleasure to recall. So remembering this, I tried them out on my nephew aged 7, he was as 'star struck' as I had been in childhood. He also now watches the sky on dark nights (when he's allowed to stay up), he has asked about the solar system, and can name all nine planets in order, now he can't wait for August and the eclipse.

Recently I went to visit a friend who lives in Pagham, West Sussex (Barbara Waldron another member of the section). She has neighbours with two little girls, one of whom is very interested in astronomy. This particular weekend they had friends to stay, the Friday evening was wonderfully clear and bright for star watching, we were all stood at the back of the house (which actually backs onto the beach, and has a panoramic view from east to west horizon). I was asked by the budding astronomer to point out the constellations to her, so as I did, I told her some of the stories linked to them. When next I looked downward, her sister, friend and some of the adults had joined us.

So I urge all of you out there with an interest in the stars, please encourage the child in your lives into astronomy with the stories of the stars. They are just as good as other fairy tales; they have all the ingredients that children love, hero, villains, good and evil, plenty of fighting and battles, monsters, romance, magic and mystery. There are sometimes many different legends belonging to the one constellation, but I think that's all the more fun.

To help you out and get you started here are some of the most popular.

URSA MAJOR - The Great Bear & URSA MINOR - The Little Bear

Ursa Major was originally Callisto, handmaiden to the goddess Juno and daughter of King Lycaon of Arcadia. She grew more beautiful than Juno herself; as a result Juno became very jealous. To keep Callisto from harm, Jupiter, king of Olympus, turned her into a bear. Arcas, Callisto's son, was out hunting one day, he saw the bear and was just about to kill it with his spear when Jupiter stopped him. He turned Arcas into a bear also, and placed both of them in the sky.

CASSIOPEIA, CEPHEUS, ANDROMEDA & PERSEUS

Cassiopeia was an arrogant and boastful queen, wife of King Cepheus and mother of the exceedingly beautiful princess Andromeda. Cassiopeia once boasted that Andromeda was lovelier than the sea-nymphs or Nereids. This made Neptune, the sea-god, very angry, so he sent a monster to destroy the lands of king Cepheus. The king and queen were so fearful they asked the Oracle what could be done to appease Neptune. What the Oracle told them was dreadful, Andromeda was to be chained to a rock by the edge of the sea and left as a prey for the terrible sea-monster. However, this story ends happily, at the last moment a gallant hero Perseus saved Andromeda. Perseus while returning from an expedition against the Gorgon, Medusa (who could turn any creature to stone if they looked into her eyes, even when dead), had slain her and cut off her head, so upon showing it to the sea-monster it was destroyed and Andromeda rescued.

CETUS - The Whale or Sea-monster

Representing the monster of the above legend.

PEGASUS - The Flying Horse

Pegasus is the winged horse that Perseus was riding when he saw Andromeda tied to the rock, and flew down to rescue her. Later Pegasus helped another hero,

Bellerophon, when he was battling with the Chimaera, a hideous, three-headed, fire-breathing monster. When he had slain the Chimaera, Bellerophon decided to ride up to Olympus; but Jupiter, cross at his daring, sent a gadfly to sting Pegasus and so when he reared up his rider fell off. Pegasus continued the journey up to Olympus, and was placed among the stars.

DRACO - The Dragon
Draco is identified with Ladon, the dragon who watched over and guarded the golden apples in the Garden of Hesperides, and was finally killed by Hercules. It is also thought to represent the guardian dragon of a sacred spring, killed by the hero Cadmus, who afterwards planted the dragon's teeth and raised a whole army of armed men, who immediately fought amongst themselves and slew each other, leaving only the five survivors who helped Cadmus to found the city of Boeotia.

ORION - The Hunter
There are many legends connected to Orion. One tells how he was the son of Neptune and Euryale, and claimed that he could conquer any creature that the earth could produce, Juno was jealous of him, and made a giant scorpion crawl out of the ground and it killed Orion by biting him on the foot. Diana, the goddess of hunting, pleaded that he be placed in the heavens directly opposite the scorpion (Scorpius) so that he should not suffer harm from it again.

Another legend tells of how Diana was in love with Orion, and this made Apollo very angry. Apollo talked Diana into an archery contest against him, and he pointed to a faraway objected in the sea. Diana aimed and struck the mark perfectly, but Apollo had tricked her, and the target had been Orion's head, he had been swimming in the ocean. Diana's arrow having killed him, the goddess placed him among the stars.

CANIS MAJOR - The Great Dog
This represents the biggest of Orion's hunting dogs, faithfully following his master during the never-ending journeys across the sky.

CANIS MINOR - The Little Dog
Representing the junior of Orion's two hounds.

LEPUS - The Hare
According to legend Orion was very fond of hunting the hare, so one was placed at his feet.

HERCULES
Hercules is a very famous mythological hero. He was the son of Jupiter and Alcmene, and was educated by Cheiron the centaur. Juno was jealous of him, and her devious plans ended in Hercules being made to do the will of his half-brother Eurystheus, who made him to carry out twelve almost impossible tasks, 'The 12 Labours of Hercules'. When these were all successfully completed, and after the great hero died he was made an immortal, becoming reconciled with Juno and marrying her daughter Hebe.

HYDRA - The Water Snake
Hydra was a monster in mythology with a hundred heads, which preyed in the Lernaean marches. Hercules was ordered to kill it, this being his second labour, which he did.

CANCER - The Crab
This represents a gigantic sea-crab, which appeared and came to the aid of the watersnake (Hydra), with whom Hercules was battling. Hercules stamped on the crab, causing it to be destroyed, Juno, queen of Olympus, who was envious of Hercules, placed it in the sky.

LEO - The Lion
Another of Hercules' victims, the gigantic lion that hunted in the Nemaean forests.

AURIGA - The Charioteer
Auriga represents Erechthonius, son of Vulcan, who was born deformed, and was reared by Minerva without the knowledge of the other Olympians. When he reached manhood he became King of Athens, and invented the four-horse chariot, for which Jupiter honoured him by placing him in the sky.

ERIDANUS - The River
It is said to represent the Italian River we now call the Po. The story tells of a brash young man called Phaethon, who was allowed to drive the sun chariot across the sky for one day, in the course of doing this, the horses bolted. So as to save the world from destruction, Jupiter sent a thunderbolt that struck Phaethon and made him fall from the chariot, and he fell headlong into the river below.

GEMINI - The Twins
This constellation represents Castor and Pollux, two mythological heroes; they were twin boys, sons of a Spartan king, Tyndarus, and his queen Leda. Pollux was immortal, while Castor was not. When Castor was killed, Pollux was so grief stricken that he asked to be allowed to share his brother's immortality, Jupiter agreed and placed them both in the stars.

BOOTES - The Herdsman
One fable tells of how Bootes' brother robbed him of all his possessions, and after wandering round the earth he invented the plough, which was drawn by two oxen. His mother, Callisto, was so impressed that she persuaded Jupiter to place Bootes in the sky.

COMA BERENICES - Berenice's Hair
When Ptolemy Euergetes, king of Egypt, went on a dangerous expedition against the Assyrians, his wife, Queen Berenice, swore that if he returned unharmed to her, she would cut off her beautiful hair and put it in the temple of Venus. The king returned safely, Berenice kept her promise, and Jupiter placed the shining tresses among the stars.

VIRGO - The Virgin
Virgo has been identified with Astraea, the daughter of Jupiter and Themis, and the goddess of justice. During the Golden Age Astraea ruled the world, but when mankind changed its ways for the worse, the goddess was so upset that she returned to Olympus.

DELPHINUS - The Dolphin
Arion, was a famous lyric poet and musician, and was travelling back from Corinth to Sicily with the rich prizes that he had won, the crew of the ship grew jealous of the valuable treasures and overcame Arion. He begged them to be allowed to play one last tune on his cithara, they granted his request, and the music caught the attention of a school of

dolphins, and they surrounded the ship. Quickly, Arion jumped overboard into the sea, and one of the dolphins took him safely to shore. The constellation Delphinus represents this dolphin.

LYRA - The Lyre
It represents the lyre presented by Apollo to Orpheus, son of Eagrus and Calliope. With this lyre Orpheus charmed not only wild beasts but also the stones and tress, and even chained the rivers in their courses. After Orpheus' death his lyre was placed in the sky.

OPHIUCHUS - The Serpent-bearer
Ophiuchus is said to be Aesculapius, son of Apollo and Coronis, who was knowledgeable in medicine that he not only cured the ill but also brought the dead to life. This upset Pluto, ruler of the Underworld, who was afraid that his kingdom would disappear. Jupiter killed Aesculapius with a thunderbolt, but afterwards placed him in the sky.

ARIES - The Ram
Athamas, king of Thebes, had two children, Phryxus and Helle. Both children were cruelly treated by their stepmother, Ino, and it was brought to the attention of Mercury, messenger of the gods. Hearing that Ino was going to kill Phryxus, Mercury sent a ram with a Golden Fleece to rescue them. The ram could fly, and took the two children across the water. Helle slipped and fell, and was drowned in the sea, which is now known as the Hellespont or Sea of Helle. Phryxus managed to hold on until he reached safety. After the ram's death the Golden Fleece was hung in a sacred grove, and was later removed by Jason and his Argonauts, while the ram itself was honoured by being given a place in the sky.

PISCES - The Fishes
According to one legend, Venus and Cupid once escaped from the giant Typhon by flinging themselves into the River Euphrates and turning themselves into fishes. Minerva celebrated their escape by placing two fishes in the sky.

TAURUS - The Bull
According to legend Jupiter, the king of the gods, fell in love with Europa, daughter of King Agenor of Crete, and decided to kidnap her. He assumed the form of a white bull and persuaded Europa to ride on his back, Jupiter dashed into the sea and swam away with her.

AQUILA - The Eagle
It represents an eagle sent by Jupiter to carry off Ganymede, a shepherd-boy of Phrygia, whom the king of the gods wanted as a cupbearer. He was to replace Hebe, Jupiter's daughter, who stumbled and fell over at an important occasion, and was made to give up her post.

Jessica Harris

MIR to be eclipsed?

Most of us who have been at the Observatory on clear nights have watched the Russian space station Mir crossing the sky, sometimes almost overhead and looking very bright. We know that Mir is nearing the end of its life and is due to be brought down, re-entering Earth's atmosphere probably during August. The new International Space Station is now starting to be assembled in a similar orbit and, being much larger than Mir, should appear even brighter once the solar panels have been attached.

A recent news item announced that a Paris fashion designer, who claims to have the ability of precognition, is predicting that space station Mir is going to crash on Paris. He is giving his staff the day off to leave the city. The date and time of this foreseen disaster? The 11th August at 11.23 am. This should sound familiar as it is the time the total eclipse passes just to the north of Paris. Will the eclipse have some dire effect on Mir, or will the lucky employees have the day off just to go and watch the eclipse?

The next, and probably the last, time to see Mir will be from July 12th to 24th in the evenings. Timings can be obtained from the Astronomy and Space Info line 0891-88-1950.

Geoff Falla

The Perseids Meteor Shower

There's more to the 11th August than a solar eclipse. Although a meteor shower cannot compare to the eclipse, it will provide an entertaining finale to a memorable day. The Perseids are active from the 25th July to around the 20th August, with the peak being around the 11th and 12th. They are generally the most reliable shower, often giving displays of about 60 meteors per hour. They are not the fastest shower but, travelling at speeds of 60 miles per second, they are pretty fast with many of the brighter ones leaving trains.
The parent comet is Swift-Tuttle which has an orbital period of 130 years. This comet appeared as the great comet of 1862 and it was calculated to have an orbital period of about 120 years. It was therefore expected back in the early 1980's but did not show. It was not actually recoverd until 1992, by Tsuruhiko Kiuchi and was a magnitude 5 object by November 1992. It was realised that this comet was the same as Comet Kegler of 1737 and the uncertainty of its orbit was due to non-gravitational pertubations. In the case of this comet strong gas jets from the nucleus affected its speed around the time of perihelion, making the calculations of the orbit several years out. When the comet apppeared in 1862 astronomers had already learnt that the meteors came from the debris left by a comet, though at this time the link with the earlier comet had not been made.
Several of the many annual meteor showers are rather hit or miss when it comes to producing a reliable regular show, but this is the most likely to live up to expectations. We normally hold a barbecue on this night and count the meteors after about 11 o'clock for an hour. As many of us will have been in Alderney or elsewhere there'll no barbecue on that day but hopefully several of us will stay up later and watch the Perseids.

Debby Quertier