

SPÉIR

No.1 Winter 05

Astronomy with a Kerry Twist

Planetary Probes

From Sputnik to the Rovers and beyond

CLUSTERS CLUSTERS EVERYWHERE

COMETS & HOW TO SEE THEM

PLUTO AND ITS HOST OF MOONS

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www.kerryastronomyclub.com

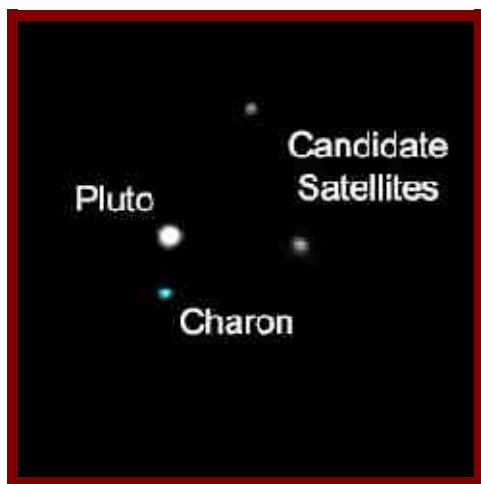
Welcome to SPÉIR

Spéir, Kerry's best Astronomical periodical has finally arrived. You now hold in your hands a little piece of history, cherish it. "From *Little acorns...*" We should be so lucky, if we manage to bring out four or five issues of Spéir annually, we will be doing well. Our aim with Spéir is to provide a little extra to our members between our monthly talks and our observing sessions. Something for the cloudy nights. The problem with a publication like this, is that a society like ours, has people at all different levels and it would be impossible to please all of the people all of the time. So we aim to please all of the people some of the time, but failing that, we will try to please some of the people some of the time. But seriously, we hope there will be a little for everybody in here and with time we can tailor the publication to meet the needs of most of the members. With this in mind, we encourage you to tell us what works and what doesn't. Have we left anything out or are we OTT on anything. Our aim is to try to achieve a balance between deep space and solar system articles interspersed with reviews, news bites, whats to see in the sky and the latest from our club. So bear with us while we try and get it right.

Cheers

Trevor O'Donoghue

NEW MOONS @ PLUTO



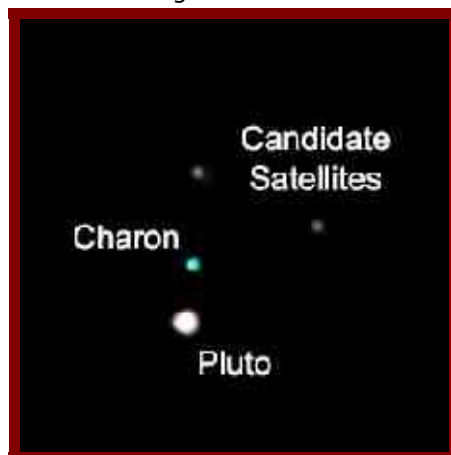
Using NASA's Hubble Space Telescope to probe the ninth "planet" in our solar system, astronomers discovered that Pluto may have not one, but three moons.

If confirmed, the discovery of the two new moons could offer insights into the nature and evolution of the Pluto system, Kuiper Belt Objects with satellite systems, and the early Kuiper

Belt. The Kuiper Belt is a vast region of icy, rocky bodies beyond Neptune's orbit.

"If, as our new Hubble images indicate, Pluto has not one, but two or three moons, it will become the first body in the Kuiper Belt known to have more than one satellite," said Hal Weaver of the Johns Hopkins Applied Physics Laboratory, Laurel, Md. He is co-leader of the team that made the discovery. Pluto was discovered in 1930. Charon, Pluto's only confirmed moon, was discovered by ground-based observers in 1978. The planet resides 3 billion miles from the sun in the heart of the Kuiper Belt.

"Our result suggests that other bodies in the Kuiper Belt may have more than one moon. It also means that planetary scientists will have to take these new moons into account when modeling the formation of the



Pluto system," said Alan Stern of the Southwest Research Institute in Boulder, Colo. Stern is co-leader of the research team. The candidate moons, provisionally designated S/2005 P1 and S/2005 P2, were observed to be approximately 27,000 miles (44,000 kilometers) away from Pluto. The objects are roughly two to three times as far from Pluto as Charon. The team plans to make follow-up Hubble observations in February to confirm that the newly discovered objects are truly Pluto's moons. Only after confirmation will the International Astronomical Union consider names for S/2005 P1 and S/2005 P2.

The Hubble telescope's Advanced Camera for Surveys observed the two new candidate moons on May 15, 2005. "The new satellite candidates are roughly 5,000 times fainter than Pluto, but they really stood out in these Hubble images," said Max Mutchler of the Space Telescope Science Institute and the first team member to identify the satellites. Three days later, Hubble looked at Pluto again. The two objects were still there and appeared



to be moving in orbit around Pluto. "A re-examination of Hubble images taken on June 14, 2002 has essentially confirmed the presence of both P1 and P2 near the predicted locations based on the 2005 Hubble observations," said Marc Buie of Lowell Observatory, Flagstaff, Ariz., another member of the research team. The team looked long and hard for other potential moons around Pluto. "These Hubble images represent the most sensitive search yet for objects around Pluto," said team member Andrew Steffl of the Southwest Research Institute, "and it is unlikely that there are any other moons larger than about 10 miles across in the Pluto system."

Trevor O'Donoghue

NEWS BITES

First Mirror Cast for the Giant Magellan Telescope

Workers at the University of Arizona Steward Observatory Mirror Lab have cast the first mirror for the Giant Magellan Telescope. By the time they're complete, the lab will cast a total of 7 of these enormous 8.4-meter (27-foot) mirrors, giving the enormous observatory the equivalent of a 22-meter aperture. The Giant Magellan Telescope will be constructed in Northern Chile by 2016.

SPACE SHUTTLE SUCCESSOR

A Northrop Grumman/Boeing team has unveiled new details about the successor to the space shuttle: the Crew Exploration Vehicle. This new spacecraft, reminiscent of the original Apollo capsule, is expected to carry humans to the International Space Station by 2012 and return them to the Moon by 2018. Unlike Apollo, however, the CEV will carry four astronauts to the Moon and back. It will orbit the Moon autonomously, allowing all four astronauts to descend to the surface

WHAT'S A.... COMET

The first in a series of articles bringing the universe to you in simple easy to understand terms



Many millions of comets known as the Oort Cloud lie in our Solar System beyond the planets Neptune and Pluto. Comets are composed of frozen water, ammonia, methane, carbon dioxide and dust. Occasionally one of these comets break away from the group and moves into an orbit towards our sun. As it nears the sun solar rays heat up the ice and releases the frozen water as gas. This gas forms the fuzzy halo around the comets' nucleus. As comets veer towards our sun they will become visible to the observer in varying degrees of brightness. Some will appear suddenly and stay for a period of days or months and disappear, never to be seen again. Others are periodic with the period between each return lasting from three years to many hundreds of millenia.



While some comets will appear star like, others are more spectacular, producing long singular or multiple trails of dust and gas as they approach the sun. Their orbit takes them around the sun and back into deep space. However when they move away from the sun the tail appears to lead the comet. This is an optical illusion caused by the fact that, from earth, we are looking through part of the tail. Occasionally a comet will break up as it approaches the sun, causing it to split in two or more fragments and

scattering dust grains in its orbit. This phenomenon has been observed and recorded on a number of occasions. In 1846AD Comet Biela split in two. It returned in 1852AD as twin comets. Another result of the breakup of comets is cometary fragments colliding with earth. On the morning of June 30th 1908 near the Tunguska River in Siberia a massive explosion took place above the earths surface causing shock waves and a fireball which destroyed 2000sq Km of flattened and scorched earth. This thankfully is rare. At particular times of the year earth crosses the orbit of certain comets. This orbital path contains dust shed by the comet. This dust is burnt up by friction as it enters earths atmosphere at high speed and is called a meteor shower. On July 4th this year, history was made when Nasa Mission Deep Impact struck Periodic Comet Temple 1 at a speed of 37,000 kph with an on board camera providing the closest ever views of a comet. The impact itself was observed by the main flyby craft from a distance of 500km providing important information on the composition etc of the comet. The data from this mission will hopefully provide us with considerable new information about these fascinating celestial visitors.

Observing comets

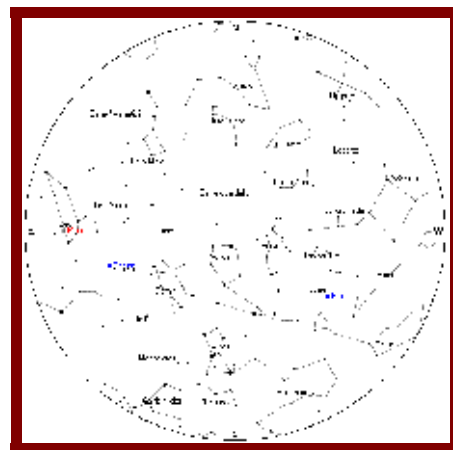
Most short Period comets we know about, such as Halley's, tend to be fainter than the sporadic comets. This is because they have been around the sun a number of times and will have burnt off a lot of their matter. The appearance of sporadic comets is generally unpredictable. However, larger telescope's will pick them up as soon as they are in range, and from that we can work out their path, brightness and expected magnitude. Last year we were treated to Comet Macholz which became a naked eye object and was easily viewed in binoculars and small telescopes. Macholz appeared as a fuzzy patch in binoculars with a faint tail visible on crystal clear nights. The majority of comets appear no more than a faint fuzzy to amateur instruments, but occasionally we will experience something truly remarkable such as comet Hale Bopp in 1996/97 which became a brilliant naked eye object for 18 months. Lets hope one of these interlopers decides to make its presence felt in the near future and we are all treated to a bright naked eye comet.

Marian Gunning

SPÉIR REVIEW

One of the aims with Spéir is to bring info to our members on resources available to the amateur Astronomer. Chief among these is the Internet and the PC. This issue will look at www.heavens-above.com, a website that provides a host of astronomical data.

Simply register and provide your latitude and longitude (the main towns are provided on the website) and you can get access to a plethora of information tailored for your location. (another neat option is that you can specify a number of different locations and get times tailored for each. Simply click on change observing location) A lot of websites will provide astronomical data for your location, but not many provide flyby times of the major satellites. Click on the ISS link and you can see when the International Space Station will next pass by your location. You can even get a map of where to see it. Next up is Iridium Flares. These are Bright flashes of light in the night sky that are due to sunlight reflecting off of the mirrors of orbiting Iridium communications satellites. This can be quite spectacular and extremely bright and last for only a few seconds. They look like a star getting brighter and brighter and eventually fading away. Some are bright enough to cast shadows and be seen during the daylight. Heavens-above will provide you with times, where to look in the sky and even maps to help you find these.



If you need to know what time any particular planet rises or sets, where to find it you can get it all in great detail at heavens above as well as simple maps of the night sky. The also supply constellation maps and even supply maps to help you track down asteroids. Best of all is the price, its free. So next time you are online check out www.heavens-above.com.

Trevor O'Donoghue

Shopping for a Telescope

Its Christmas Morning, Junior runs down stairs and finds a telescope under the tree. He is mad about astronomy and cant wait for it to get dark so he can see all those things he has read about. Night falls, its crystal clear, perfect. Junior sets up his telescope, turns it towards the moon expecting to be amazed but all he sees is a blur of colours and not a crater in sight. Junior then tries a star or a planet, again nothing to see. "I want a drum kit" says Junior. Junior has now lost his interest in astronomy, all because Mommy and Daddy, bought a telescope without knowing the facts, which are

- Avoid any telescope that makes claims such as 250/350/450 times magnification. Magnification is not important, The size of the lens or mirror in the telescope is.
- As a rule, avoid most department store telescopes
- Do not be swayed by the pictures.....Chances are the pictures on the box are Hubble Space telescope Pictures and your new telescope will not show anything like these.

Talk to someone who knows about astronomy before you buy a telescope. Do not have exceptionally high hopes about what you will see through a telescope. Any decent telescope will show you the craters on the moon in stunning detail, the moons of Jupiter, the rings of Saturn and a wealth of galaxies, nebula and star clusters. You may even be able to tease out some detail on mars. Even with the largest telescope, you will not see any of the vivid colours you see on your box. You need long exposure photography to bring out colour.

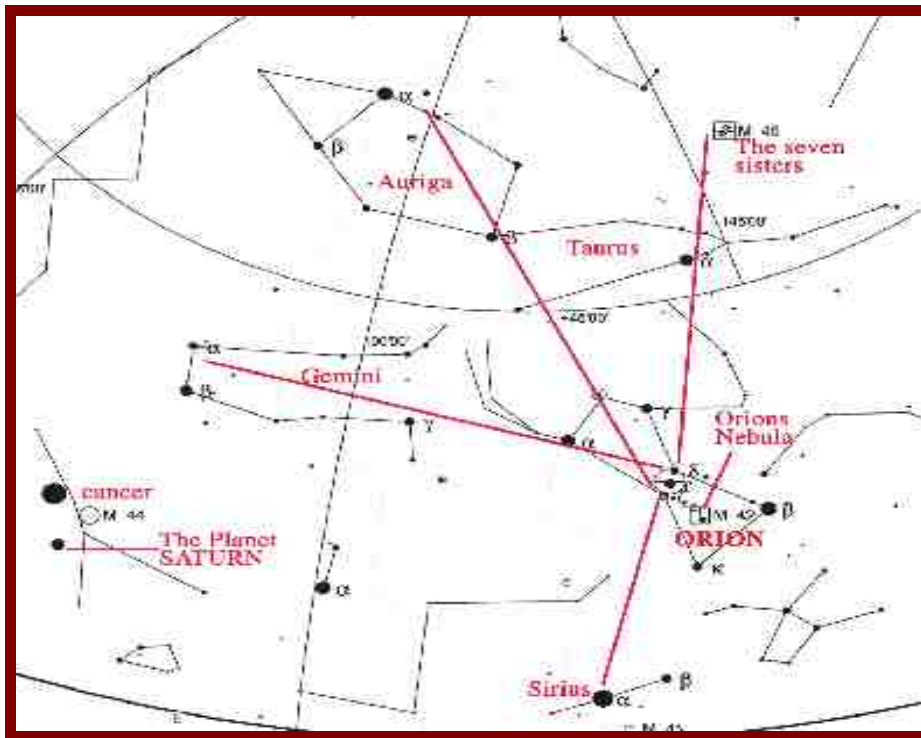
A decent tripod is essential for any telescope, and is as important as the telescope itself.

Generally telescopes should only be bought from reputable dealers and expect to pay anything from €200 upwards. There are exceptions. In the past some of the German chain stores offered beginner telescopes as "specials". These scopes were excellent value for money and were an ideal introduction to Astronomy. If such scopes arise again, Kerry Astronomy club will have details and an educated opinion on our website. If your budget does not stretch to a telescope, then a pair of binoculars make an excellent substitute, some would say in fact that binoculars are

equal to or better than a beginners telescope. I tend to agree. Binoculars are an excellent introduction to the night sky. If you are buying binoculars, opt for a pair of 10X50's. This means a magnification of 10 with a front lens of 50mm diameter. 10X50's are without doubt the most useful pair of binoculars for astronomy. Visit www.kerryastronomyclub.com for an excellent range of handbooks which are free to download and are suitable for all levels, from beginner to advanced.

Before buying a telescope, see if you can look through a range of telescopes. A Kerry Astronomy Club observing session is ideal for this. Details of which will be available from www.kerryastronomyclub.com.
Trevor O'Donoghue

Orion a Stellar Signpost to the winter skies.



Orion, one of the most distinctive and brightest constellations (grouping of stars) dominates the winter night sky . It is second only to the plough or the great bear as a recognisable constellation. Orion is easily found. Look south or southeast on a winters evening and you will see three bright stars in a row, making a distinctive and unmistakable pattern. You are now looking at Orion's Belt. A map of Orion is above. Directly under Orion's belt is Orion's sword, which contains one of the most famous objects in the night sly, Orion's

Nebula. This appears as a hazy patch of light where stars are being born. Turning even a modest pair of binoculars towards this nebula will reveal a wealth of detail. Orion acts a signpost to other constellations in the sky and is an excellent starting point to learn your way around the sky. If you draw an imaginary line through Orion's belt and extend it to the left you will reach Sirius, the dog star, the brightest star in the sky, and a member of the constellation canes major (the great dog). Extend this imaginary line from Orion's belt out to the right and you will reach a bright orange star at the point of a v of stars. This orange star is known as Aldebaran and is in the constellation Taurus the bull. Continue the line and you will reach The Pleiades star cluster. It looks like a mini version of "The Plough" and is a spectacular sight in a pair of binoculars. Above and to the left of Orion is the Constellation Gemini, Above and to the right is the

constellation Auriga. These constellations are amongst the brightest and most distinctive in the entire sky and hold a wealth of treasures for the absolute beginner and advanced astronomer.
Trevor O'Donoghue

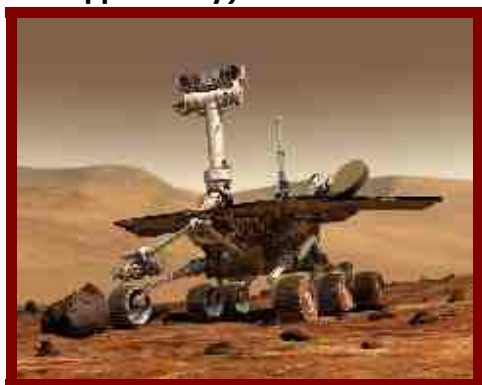
Hayabusa collects asteroid sample

Japan's asteroid explorer, Hayabusa, successfully touched down onto the surface of asteroid Itokawa and is now clutching a sample of material. The spacecraft will now begin the journey back to Earth, and should arrive in June 2007

A brief History of Planetary Probes

The last two years have been the most amazing in the history of inter-planetary exploration since Voyager 2 in the 80's. Much of what has been happening is not reported regularly on the media. One must regularly check the web sites starting at the best website of all (www.kerryastronomyclub.com).

We have had Europe's Mars express orbiter in orbit around Mars since December 2003. It also carried Britain's Beagle 2 Lander which unfortunately did not survive and even more unfortunately grabbed all the negative headlines while Mars express was virtually ignored. Mars express has been sending back the sharpest, high resolution stereo images ever of Mars surface. It is also carrying a number of instruments for detecting the chemical properties of Mars (especially Methane) and is the first probe ever to use ground penetration Radar (the MARSIS) for detecting ice and water tables below the surface of Mars (among other things). The incredible **NASA Mars rovers (spirit and Opportunity)**



are still going strong almost two years after landing and have blown us away with stereo images of the surface so clear that it is (literally) like standing on Mars yourself and looking around with 20/20 vision. The Cassini orbiter went into orbit around Saturn in July 2004 and will continue to send back fantastic images of the planet, the rings and the moons for at least another two and a half years. Europe's Huygens Lander was carried by Cassini and landed on the Saturn moon Titan (the first landing on an outer solar system body). The NASA "Deep Impact" probe smashed a large copper bullet into Comet Temple and recorded the closest and clearest images of a comet yet. The Japanese probe Hayabusa and the mini Lander MINERVA only recently landed on and took off from asteroid Itokawa. It plans to return samples to Earth. This will be an historic first in an age of historic firsts. However there is much

more to come as an armada of probes are already en route or plan to launch very soon.

To fully appreciate these recent events it is important to have some idea of the long history of space probes and inter-planetary exploration. Imagine what life was like before space probes! Well many people can because nothing had ever returned data from above the atmosphere until Sputnik 1 in 1957. Up until then Astronomers were rooted to ground based observations. This is very limiting for a number of reasons. The atmosphere is a large obstructive blanket of air over us through which we must battle to gather any data at all. Many properties of moons and planets cannot be measured from the ground such as magnetic fields. The advantages of being able to carry out measurements and photography close to a planet or moon are vast. As technology advances the capabilities of probes increase exponentially. There is very little a landing astronaut can do that a probe/lander can't.

Sputnik 1 (October 1957, USSR) was the first artificial satellite



to be put into orbit. It paved the way for an armada of probes within a few years. It was the height of the cold war and it was believed that the next super power in the world would have to control space. Therefore a "space race" commenced and even though the motifs were of a military nature, it is an ill wind that does not blow some good and the world of inter-planetary science entered a golden age. Probes like **Explorer-I** (March 1958, USA), and **Luna 3** (October 1959, USSR) among others followed quickly on the heels of Sputnik. By the end of the 1950's Probes had already analysed the nature of Space, the Earth radiation belts (Van Allen belts), the Solar wind, the radiation (or lack thereof) around the Moon and had taken the first photographs of the far side of the Moon. This was already an amazing feat in an age with none of

the technology we take for granted today. Even though the Moon was the primary focus of probes in the 60's, the nearby planets (Venus and Mars) were visited. **Mariner 4** (July 1965, USA) flew past Mars collecting the first close-up photographs of another planet. Up until this time it was believed by some people that Mars might harbor intelligent life. The pictures returned, however, showed craters and scientists new they were dealing with a largely dead planet.

We all know that Apollo 11 (July 20th 1969) landed on the Moon and Neil Armstrong became the first man to walk on the moon. However by this time, probes had already landed on the surface of the moon and had taken good quality photos from the surface and performed chemical analysis on the soil and rocks. Just over a year later, a probe even returned samples from the moon **Luna 16** (September 1970, USSR) and a rover **Luna 17/Lunokhod 1** (November 1970, USSR) traversed miles of its surface. The 70's saw the massive advances in interplanetary science. Fueled by the cold war, the budget for space exploration remained healthy. New developments in technology such as semiconductors helped greatly.

Pioneer 10 (December 1973, USA) flew by Jupiter, **Mariner 10** (March 1974, USA) made three fly by's of Mercury (Mercury has not been visited since!), **Viking 1 and 2** (July and September 1976, USA) orbited



and landed on Mars. The orbiters mapped the entire surface in great detail. The landers sent back the first colour photos of Mars from its surface. **Pioneer 11** (September 1979, USA) was the first to explore the planet Saturn but **Voyager 1 and 2** (1979, USA) became the greatest probes of all with their "grand tour" of the outer planets. Together they discovered 26 new moons, three ring systems and paid the first visits to Uranus and Neptune and the Solar termination sphere. They continue to work as outer solar system/interstellar probes and should continue to do so for another

20 years. With the exception of ESA's probe **Giotto** (ESA, March 1986) the 80's saw a decrease in funding for interplanetary probes as the cold war came to a close. The 90's saw a new approach from NASA and the rest of the world to build cheaper more cost effective probes. Though one cannot deny the logic of this, the result was a relative quiet period for probes that continued well into the 90's. A number of failures in the 90's did not help space agencies with their quest for funding. The radar mapping of the surface of Venus by **Magellan** (August 1990, USA) and the Jupiter orbiter **Galileo** (December 1995, USA) were high lights in this quiet period.

However the future looks good on the back of the recent successes. We are all very fortunate to be able to witness this new era of interplanetary exploration. Imagine what Galileo himself would say if he were alive today! Keep up to date on the latest planetary probes.

<http://saturn.jpl.nasa.gov/home/index.cfm> (Cassini-Huygens)

http://www.esa.int/SPECIALS/Mars_Express/ (mars express)

<http://marsrovers.jpl.nasa.gov/home> (mars rovers)

<http://www.isas.jaxa.jp> (Hayabusa)

Paddy Stack

CLUSTERS CLUSTERS EVERY WHERE



Embedded within the majestic winter constellations are a host of open clusters, most are just beyond or at the limit of naked eye visibility and they truly are the gems of the winter sky.

Scan along the milky way with binoculars or a telescope and you will come across a number of knots of stars of all different shapes and sizes, these are open clusters, a group of stars that were born together and are traveling through space in the same direction at and at the same speed. The two easiest to find and delightful clusters are well within the reach of any naked eye observer, these are the Pleiades and the Hyades in Taurus the bull. The Pleiades or "seven sisters" is a delightful cluster for the naked eye,

but truly stands out in binoculars, a telescope will not do it justice. It lies at about 425 light years from us and is about 100 million years old. Long exposure photographs bring out some of the nebulosity surrounding the stars. This is the gas that gave birth to The Pleiades. The Hyades cluster take on the shape of a "V" with a bright orange star Aldebaran at the tip of one of the arms of the V. this star is not a member of the cluster but is in our line of sight to the cluster and adds to the wonderful sight. From Taurus the bull we move to Perseus and home to the famous double cluster. Just on the edge of naked eye visibility, these cluster are a dazzling sight through binoculars but are simply one of the best sights to be seen through a telescope. Moving swiftly on from this famous double we journey to Auriga which plays host to a trio of famous clusters, M36, M37 and M38.



These clusters are beyond naked eye visibility but are well within the reach of any pair of binoculars, and in a binocular with a wide field of view you may be lucky to get all three in the same view. At first, all appear similar but further study will yield the differences in shape, size and magnitude of the clusters. Turn a telescope on these clusters and you will easily spot the differences. Moving southwards from Auriga we journey to Gemini. Located in the foot of one of the twins we have another binocular cluster, M35. Appearing larger than the clusters in



Auriga, it makes a lovely sight in a telescope. Owners of Larger telescopes may be in for a treat, for close by M35 lies another cluster NGC 2158, which make a lovely sight in larger amateur telescopes.

Continuing our journey southwards we enter Canis Major, home of the brightest star in all the heavens, Sirius. Underneath Sirius within naked eye visibility is a stunning open cluster, M41. Located at 2400 Light years from us, this cluster is transformed by turning a pair of binoculars on it and is truly glorious. Next on our journey, we will take a quick stop at Orion where there is a spectacular open cluster, but unfortunately due to the proximity of the nearby famous stellar nursery M42 (the great orion nebula) it is often ignored. Turn a pair of binoculars at Orion's belt and prepare to be amazed, the field of view is full of glistening gems and is a wondrous site, and finally we jump back to Perseus to finish, where an open cluster is located around the bright star Alpha Persei. Again binoculars are needed to reveal the full splendor of this cluster, but it is well worth it. That's it for the moment but this is only a very brief tour through some of the clusters of the winter sky. I will leave it up to you to check out the E.T. Cluster, try not to get stung while visiting the beehive, or visit a cluster surrounded by a rosette. While you are at it do not forget to look at the closest open cluster to us, I am not telling you where to find this one, but you have without a doubt observed it already but may not have recognised it for what it is. The winter sky is full of treasures waiting to be discovered, and the only way to find them is to go out and look up.

For a map showing all of these clusters and more, visit our website on www.kerryastronomyclub.com. On the website we will also let you know where and how to find the beehive, the E.T. cluster, the rosette and much more. You can also find out what the closest open cluster to us is. If you find that clusters are your thing then you will also find a link to a binocular observing handbook by IFAS (Irish Federation of Astronomical Societies - www.irishastronomy.org) which contains more clusters than you can shake a stick at..well enough until your hand is tired from shaking the stick anyway. Enjoy.

Trevor O'Donoghue

SKY HIGHLIGHTS

The Planets for the next few months

Mercury – not visible until February when it puts in a great appearance. Look for it in the western sky in the latter half of the month after the sun sets. On 24th Feb it sets 1.5 hr after the sun.

Venus – By the middle of December Venus has reached its maximum height and brightness and is a stunning sight, in the Southern/South Western Sky at sunset. As December moves into January Venus is lost in the glare of the setting sun but reappears in the morning twilight towards the end of January. As February progresses look for Venus a number of hours before Sun rise.

Mars – Mars still dominates the early evening sky in December but begins to fade and sink lower in the sky as 2006 dawns and slips into February. Watch Mars as it moves through the sky passing only 2.5 degrees away from Pleiades in mid February.

Jupiter – You have to stay up late or get up early to catch Jupiter as it rises in the wee hours during December. As the new year begins it rises earlier and earlier but by the end of February it is still rising just before 1 am

Saturn – the star of the winter sky. As December progresses, Saturn rises in Cancer near the beehive cluster making a stunning site. As January and February come and go, Saturn is ideally placed for observing.

OTHER SKY HIGHLIGHTS

Take advantage of the winter evenings to observe the glorious winter constellations high in the southern sky. This is one of the best seasons of the year to begin to learn to find your way around the sky using Orion as a signpost.

January sees the arrival of the Quadrantid **Meteor Shower** which peaks on 4th January. Keep an eye out in the Northern section of the sky as the meteors will appear to come from above and to the left of the handle of the plough in the constellation of Bootes.

NOT TO BE MISSED THIS WINTER

Winter holds a vast amount of treasures to find and be explored. There are a few however, that you cannot miss.

Saturn. This winter sees Saturn riding high in the sky again, if you looked at Mars and could not see what all the fuss was about, then you need to look at Saturn and its ring system. Visible

in a 60mm telescope, this is a sight that you will never forget. If you do not own a telescope, get to one of our observing sessions over the next few months where Saturn will be on display

The Great Orion Nebula M42.



A stellar nursery, seen as a fuzzy patch below the belt of Orion, binoculars or a small telescope will reveal a lot of detail. With a telescope see if you can see some of the stars in the centre of the nebula that make it visible.

The Double Cluster in Perseus, almost overhead in December and truly a stunning sight, one you will not forget.

The Moon



Perhaps the greatest sight available in amateur instruments. Some people spend a lifetime studying the moon (just ask Patrick Moore). Detail changes from hour to hour and is best seen at the terminator (where night meets day on the moon). The moon is best observed when it is far from full, when the glare is not too much and a lot of detail is visible. Download a lunar observing map at www.kerryastronomyclub.com

The Winter Constellations Bright and big and hard to miss, Orion, Gemini and Auriga are beacons during the cold winter evenings. Why not share your knowledge with someone over the next few months and who knows, you may even find it

adds to the fun.

CONTRIBUTORS WANTED

If any of you would like to see your name in print or have any articles lying around that you would love to share then please email them to trevor@framecommunications.com and I can include them in the next issue. There are no hard and fast rules on what to write about, it might be your learning curve with astronomy, your favourite things to look at..anything as long as its astronomy related. As for guidelines, the only two are

1. All sizes are welcome but try and keep articles to under 1,000 words as this is roughly a page with a few pics.

2. Try to write the article in simple, easy to understand terms. We are not all rocket scientists. That's it, get writing and emailing. I look forward to hearing from you guys soon. If any one fancies writing a review of a website or a piece of software, ideally free software, then please feel free. Reviews are around 300 words and can be emailed to address above. If you have any questions, please email address above.

LIDL TELESCOPES

If any of you bought the telescope's on offer in Lidl recently, then well done on getting an excellent instrument at a great price. You may now be wondering what to look at, may I suggest that you begin with the list on the left, then move onto the winter clusters described earlier. Don't forget the moon, A wealth of detail is available. If your need some further observing lists then visit www.irishastronomy.org where you will find three observing handbooks, free for download. These are beginner, binocular and messier handbooks and are part of the observing challenges programme. The binocular handbook is ideal for owners of a new scope also, and lists over 100 objects to look at. You can also download this at www.kerryastronomyclub.com. If you have any questions on your new scope talk to any of us in the club or email us via our website, or visit www.irishastronomy.org where there is a whole island of friendly astronomers waiting to point you in the right direction. Until the next issue, here's hoping we enjoy some clear and dark skies.

Trevor O'Donoghue



12th Sept

25th Oct

28th Oct

7th Nov

12th Nov

28th Nov

THE CHANGING FACE OF MARS

The sequence of photos opposite show Mars as it approached and receded from Earth. Mars was at its closest to Earth on October 29th when it was just 43.14 million miles or 0.4641AU away from us. The photos were taken with a Philips webcam and a homemade 8.75" Dobsonian by our very own Michael Scully. Images like these were the preserve of professional astronomers with huge and expensive telescopes until the digital revolution arrived and brought with it the benefits of cheap and affordable digital imaging coupled with free, innovative image processing software such as Registax.

OBSERVING LOCATIONS

Banna Beach – To get to our Banna Beach observing location, take the road from Tralee to Ballyheigue, pass through Ardfert and take a left a mile or two outside the village, where the sign says Banna beach. Continue to the end of this road and when you reach the dunes, turn left to the boathouse. There is some flat land and lots of space to park your cars here.

Short Mountain – from Killarney side. When you reach Castlemaine, take the road for Tralee. About a mile or so outside the town on the left there is a sign which says "Scenic Route". Take this road to the top of the mountain where you will come across a car park on your right. If you reach the summit you have gone too far.

Short Mountain – from Tralee Drive past the entrance gate to the Aqua dome and after about 2 km (a mile and a half), you come to a Tee junction where you turn left. Then after just 50m turn right up the narrow winding road that will take you to the top of the hill. Proceed over the summit and 150m later there is a car park on your left. This is the observing site.

Dromid Pearse GAA grounds (near Waterville) – from Killorglin After crossing the bridge in Killorglin coming from Tralee or Killarney turn left at the cross and proceed past Glencar and over Balach a Sheen pass towards Waterville. About 15 km before Waterville, Drumid Pearse's GAA grounds are on your right behind some tall evergreen trees.

WINTER OBSERVING SESSION -Banna

Once again we had quite a successful observing session on Tuesday 22nd November. Somewhere between 25 and 30 members braved the cold through the course of the evening and were rewarded with stunning views of our universe. On hand were 10" and 8" Dobs, a Meade ETX70 a vast range of binoculars in all apertures from 40mm up to 80mm. The evening kicked off with some constellation learning. First up was the Great Square of Pegasus followed by Paddy giving us a guided tour of the night sky with a laser pointer, The fainter constellations of the Zodiac, such as Aries, Pisces and Aquarius were next on the list. The Summer triangle and the Great and Little Bear were also pointed out. As the night wore on, the winter favourites rose higher in the sky and I think most people that turned up will have learnt a number of new constellations. Throughout the night the scopes and binoculars were turned on the reliables, such as the Great Orion Nebula, (the Maternity Ward) the Pleiades, The Hyades, The gaggle of Messier clusters in Auriga, M35 in Gemini, and the Double Cluster. A deal of time was also spent explaining the geography of our Galaxy and why we can see the Milky Way. To contrast with the Open Clusters, we also took in a number of Globular Clusters such as M13 early in the evening followed by M2 and M15. As if that was not enough, Galaxies were next in the eyepiece, M31 and 32 followed by M81 and M82. These were well received and were greeted with a number of "OOO's" and "AAH's".

Mars was briefly observed but with the moon out of the way, the majority of the evening was spent on the deep sky targets. During the evening we were also lucky to catch a number of bright shooting stars with visible trails. As the night wore on we were treated to a spectacular orange rising moon, which seemed to appear as if by magic on the NE horizon. The night was wrapped up with some views of a shimmering moon and a fuzzy Saturn as, fog, dew and the atmosphere began to get the upper hand. All in all an excellent evening and a great start to the winter observing. Let's hope for more of the same.

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