SPÉIR

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Astronomy with a Kerry Twist

EXTRASOLAR PLANETS

Top 10 Extrasolar Planetary Systems for Northern Hemisphere Viewers

Gemini: Hidden Gems

Jeremiah Horrocks

Aurorae

IFAS
www.irishastronomy.org

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WELCOME

Hi folksIts that time of year again, when the nights are getting shorter and winter skies are slipping away into the west as spring skies and all the galaxies they bring are rising in the east. Stay up into the wee hours and you can take advantage of summer skies rising. On a recent night's observing I managed to observe the Orion Nebula which is a winter object, the Great Andromeda Galaxy(an autumn sight), a host of spring galaxies in Leo and in Virgo, and just before wrapping up for the night I got my first glimpse in 2007 of the ring nebula, a gem of the summer skies.

At this time of year, for a few weeks it is possible to observe almost any object that is visible to northern hemisphere observers over the course of one nights viewing. This means it is possible to observe almost all of the Messier objects on one night. Granted, you will be out from dusk to dawn and will probably be frozen solid at the end of it, but if you manage to see most of them you will have seen the best and the brightest that our skies can offer us. I also suspect the the sense of accomplishment that comes with observing over 100 objects in one evening will be unforgettable. Some amateur astronomers never get to see all of the Messier objects, even if they have been observing for years. This year we plan to have a crack at the Messier Marathon in Kerry.

Hopefully the Irish weather will co-operate and we will get clear skies. At the time of writing we have it penciled in for the night of 18th/19th March, but we will let you know closer to the time. If spending 10 or 12 hours under the stars in the hope of catching a glimpse of 110 faint fuzzy objects appeals to you as much as it does to me, then I look forward to seeing you there.

Trevor O'Donoghue

LIFE EVERYWHERE?

NASA in the search for life, has a policy of following the water. Anytime a whiff of water is discovered in the solar system, all the usual comments about life are wheeled out. These are invariably followed by comment from microbiologists and astrobiologists about the recent discoveries that bacteria and other microbes can live almost anywhere on this planet. Next time these talking heads are on tv, why not play a game of "Astro Bingo" and see how many of these phrases can be checked off, "*extremophile*", "*life is everywhere*", "*life hitched a ride on a meteorite or comet*", "*building blocks of life*", "*The Miller Urey Experiment*", "*panspermia*"

With such hype flying around you would think that the universe is teeming with life, but we don't know. Someone needs to tell the astrobiologists. They seem to be convinced that life is widespread through out the universe and that all it needs to get going is a few molecules of water a sackful of simple chemicals a little energy and Viola Life. If only.

Lets look at the facts: We do not know how life originated here on Earth, It could have been carried here on the back of a comet, it could have spontaneously generated from a pile of slime and some heat. A comet could have brought the precursors to life and it could have only been a matter of time before it erupted on Earth. God could have waved his wand and said let there be life, and so there was life. Despite all our efforts, advances in biotechnology, nanotechnology, genetics and microbiology we have yet to create even the simplest form of of life in a lab on Earth.

We are no closer to understanding how life evolved on Earth. We have theories, nothing more. Many scientists believe that life will spring up as soon as conditions allow. This may have occurred on earth, but if we do not know how the only sample of life we are familiar with got started, how can we possibly theorise with confidence about life existing elsewhere.

Trevor O'Donoghue

GALWAY ASTROFEST

I went to the Astronomy Festival on Jan 27 organised by Galway Astronomy Club. Worth seeing; it attracted about 100 people (the Hotel conference room was full); successful for a town like Galway, so frequently covered in Cloud.

Dr. Lucie Green save a good talk on Solar Physics, describing the different methods we now have of exploring the Suns behavior, Flares, Sunspots, etc. and the different missions such as SOHO and the new STEREO mission to observe the Sun.

Prof. Chris Dainty gave a clear presentation describing the state of the Art in Adaptive Optics, and work his group has been doing, both in Astronomy and pushing AO into other fields, such as opthalmology (treating the eye as the obstacle and observing the retina behind) and productising A.O. for 'non-professional' use. He hopes in the near future to be able to provide Adaptive Optics to Amateurs from around Eur 5000.

The next speaker was Prof. Dick Butler, head of the Chemistry dept. here in NUIG; it was on Organic Chemistry and meteorites. He is a long-time amateur astronomer but professional chemist; he was particularly interested in the organic chemistry of the Murchison meteorite. After pointing out the out the false alarm of ALH 84001, he gave a convincing presentation of the extra-terrestrial origin of complex organic compounds, including amino acids, etc. in the Murchison meteorite. In particular he disputed claims that the meteorite was contaminated, pointing to the Deuterium enrichment of the compounds within; as the C-D bond is stronger that C-H, Carbon-Hydrogen compounds are more likely to be broken up by extraterrestrial radiation that their deuterium variants, leading to deuterium enrichment over terrestrial equivalents. Later he gave a nice summary of conditions on Saturn's moon Titan, pointing to its rich supply of organic compounds, showing that when hit by meteorites, lakes of water would be possible for several hundred years at a time, as the impact craters cooled, and called Titan a utopia for organic chemistry exploration.

Finally, Dr. Aaron Golden gave a very interesting talk on Brown Dwarfs: Planets or Pulsars that he and his students have been doing. Basically it turns out that while Brown Dwarfs have long been seen as the 'runt' of the Stellar world, stars that didn't make it, some of them it seems are Pulsars. (He's invented the acronym SPUDs: Sporadically Pulsating Ultracool Dwarfs, for them; maybe it'll help people remember that Pulsars were originally discovered by an Irishwoman, too). Interspersed between the main lectures we were also treated to an astrophotography workshop by Jed Glover and Dave Grennan and a brief talk on the IFAS Advanced Observers Program.

Alastair McKinstry

Galway Astronomy Club

TOP TEN EXTRASOLAR PLANETS

Since the first tentative discovery of an extrasolar planet in 1988 , the number of extrasolar planets, that orbit other stars has risen to today's figure (Feb. 2007) of 212.

As out knowledge of extrasolar planets increases, we will no doubt become better at detecting ever smaller planets. Advances in imaging technology, increases in telescope size, the widespread use of adaptive optics and the increased proficiency of observers, along with new satellites such as COROT will help increase our tally of extrasolar planets.

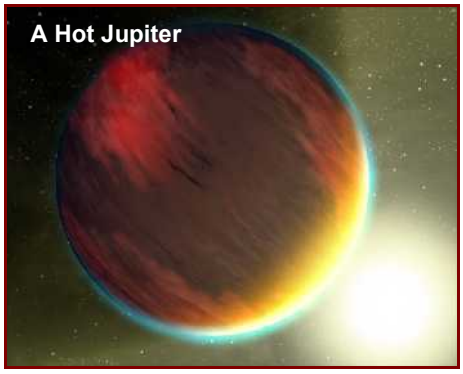
Why are we so interested in extrasolar planets? Well, they help us to refine and improve our theories of star and planet formation as well as theories on the origin of the universe. Recent advances in microbiology have led most astrobiologists to believe in the widespread occurrence of life, in particular microbial life. All this from a few hardy bacteria, living in rocks, nuclear reactors, and extremes of heat and cold. NASA's initiative to follow the water will lead us to Mars and eventually to satellites of our larger planets such as Titan, Enceladus and Europa in the search for life.

If life can exist on these satellites, then perhaps it exists on moons around other planets in orbit around other stars. We have yet to find rocky planets, similar to Earth, which exist in the habitable region around stars. Most of the planets we have found have been large and hot gas giants.

Extrasolar planet hunting is a field that advanced amateurs can become involved in by measuring the light curves of candidate stars in the hope that a large planet crossing in front of the star may lead to a measurable drop in the brightness of the star.

If you do not have the equipment necessary for this, don't worry, here I present a list of my top ten stars which hold extrasolar planets. All theoretically should be visible with the naked eye, but all are easy in a set of binoculars. So next time you are out observing why not take the time to track down some of these stars and picture their planetary systems whipping around the star. We have come a long way since Galileo first gazed in wonder at the moons of Jupiter and realized that Earth was not that special after all. God knows what he would have made of extrasolar planets.

The first extrasolar planet to be discovered was observed in 1988 around the star Gamma Cephei, a binary star 50 light years from Earth. The planet with a mass of 1.7 times that of Jupiter's orbits the primary star, a class K orange star at a distance of two AU every 905 days or so. Although observed in 1988 and confirmed in 1989, the observations were of sufficiently low quality to call into question the existence of the planet. The planet was however finally confirmed in 2002 / 2003. This star with a magnitude of 3.22 is easily visible to the naked eye.



A star in the constellation of Pegasus, 51 Pegasai was the first sun like star to be discovered to have planets in orbit around it. This G class star is also 50 light years away and is only slightly more massive than our Sun and harbors a planet with half the mass of Jupiter that orbits its parent star in 4 days at a distance of just less than 5 million miles. The planet is reckoned to have a surface temperature of 1200 degrees centigrade. Planets like this, which have a mass from somewhere like half that of Jupiter up, that orbit in a tiny orbit at a breakneck speed are known as "Hot Jupiters". Their presence has thrown our theories of planet formation into chaos. It was once thought that large gaseous planets could not exist so close (.05 AU) to their star, but rather exist at distances similar to Jupiter's distance from the Sun of 5AU or more.

Upsilon Andromedae A is a yellow subgiant 44 light years away, about 33% more massive than our Sun and home to a solar system of its own. It hosts three planets that we know about B, C and D. Planet B is a Hot Jupiter, .059 AU from the star and whipping around its orbit every 4.6 days. It is a scorched planet reaching temperatures of more than 2000 degrees centigrade. Planet C is much more sedate. It is a cool 85 degrees centigrade, lives at .83 AU, has a mass of 2.11 Jupiters and takes 241 days to orbit. Finally Planet C, the largest of the system with a mass of 4.6 Jupiters, it is also the coldest at -40 degrees centigrade, orbits a distance of 2.5 AU and takes a leisurely 3.5 years to orbit.

If you want more complete solar systems, stop by 55 Cancri A which has four planets and 47 Ursa Majoris which has two.

STAR	No. of Planets	Mag
Pollux	1	1.15
Gamma Cephei	1	3.22
Iota Draconis	1	3.3
Epsilon Tauri	1	3.53
Epsilon Eridani	1	3.73
Upsilon And	3	4.09
Psi Aquarii	1	4.24
47 Ursa Majoris	2	5.03
51 Pegasi	1	5.49
55 Cancri	4	5.95

Once you have finished with these, don't forget to have a quick look at some of the brightest stars with planets. Pollux in Gemini is hard to miss with a magnitude of 1.15, and is perfectly placed in the winter and early spring for observing. Pollux's planet has a mass of almost 3 times that of Jupiter, orbits in 590 days or so and lies at about the same distance from Pollux as Mars is from our Sun.

In the world of extrasolar planet hunting, new discoveries are coming fast and furious. The last eighteen months have seen the discovery of a number of terrestrial or rocky plants orbiting other stars. Most of these rocky planets are not suitable for life, and the hunt is on for the holy grail of extrasolar planets, a terrestrial planet orbiting in the habitable zone (region where liquid water can exist) around a stable parent star. The new generation of telescopes already on the drawing board should be capable of imaging these planets. Whatever we can image we can run through a spectroscope so we should be able to learn more about the composition of these planets, their atmosphere and suitability as a home for life.

Trevor O'Donoghue

WHAT'S...AN AURORA


An Aurora seen over Tralee. Michael Scully

To see an aurora for the first time is truly magical. It is hard to believe this wonderful light show is the result of something that happens millions of miles away on our sun. It is in fact the end result of a clash between solar and terrestrial activity. An aurora can be observed only from the most northerly and most southerly latitudes of our planet or those areas closest to the north and south magnetic poles. These two areas are called the auroral ovals. The northern auroral oval usually extends to about latitude 67° but can extend to latitude 52° north. On occasions auroras have been observed in the USA as far south as latitude 40°.

To find their source we must first examine sunspot activity. Strong magnetic fields in the sun may prevent heat from reaching part of the surface resulting in a cooler spot which we see as dark areas known as sunspots which can last days or weeks. Sometimes an outward pressure in the Solar Corona (a thin layer of gas) erupts near a sunspot. This eruption is called a solar flare and its charged particles move away from the sun at speeds which can exceed 750km/s. Scientists discovered that the solar particles or ions reach these excessive speeds by 'hitching a ride' on the magnetic fields of the sun's outer atmosphere. They hurtle through interplanetary space gradually slowing down as they interact with interstellar gases until reaching earth's magnetosphere. The magnetosphere is earth's protection barrier against solar wind storms. However, on occasions, this protection shield is breached and the high energy charged particles collide with gases in our ionosphere producing a fabulous light show or aurora at a height of about 100-250 miles above the earth. They are mostly green but sometimes blue, red, yellow or white. They usually take the shape of an arc or sometimes they have the appearance of curtains. They constantly ripple and change in shape and form. As the display ends they gradually disappear towards the pole.

In the northern hemisphere they are called the Aurora Borealis (in Latin *Boreas* – north and *Aurora*- dawn) the dawn of the north. In the southern hemisphere they are the Aurora Australis (Latin *Australis* – Southern and *Aurora* – dawn) the dawn of the south.
In 1962 Mariner 2 revealed that solar winds fluctuate in speed with the highest speed occurring at 27 day intervals.
If you want to check if auroras are expected, a good site is www.spaceweather.com which gives the probability of solar flares and geomagnetic storms in the next 48hour period.

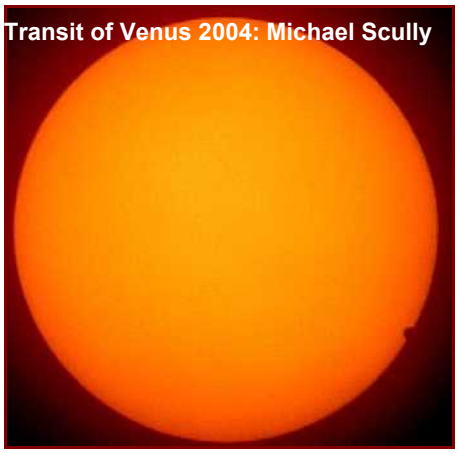
Marian Gunning

JEREMIAH HORROCKS


Observing a transiting Venus

For this edition I am profiling an Astronomer that I must confess I never heard of until Venus transit of 2004. His name was Jeremiah Horrocks and he was the first person every to observe a transit of Venus. Details of Horrocks early life are scant at best but it is know that in was born in 1618 in the village of Otterspool in Toxteth Park now a suburb of Liverpool but then a country hamlet of some two dozen houses. It is thought that his father was a farmer and a staunch Puritan. Jeremiah Horrocks entered Emmanuel College, Cambridge, as a Sizar on May 11th 1632 age 14. A Sizar or poor student might have to wait on tables or perform other chores, and probably survived on very low funds, but this route could offer a way to a degree and an appointment as a minister.
Study at Cambridge was, of course, very different then from today. The curriculum was mostly arts, divinity and classical languages (particularly Latin). A few scraps of geometry and even classical astronomy would be included in the arts course, but nothing thorough and certainly nothing of the latest scientific works of Tycho, Galileo or Kepler but there was plenty of time spare and undergraduates could study such things if they wished. There were other European centres where astronomy was taught, but Horrocks had no means to study there. He resolved to teach himself, even though it was the difficult mathematical astronomy that interested him.

Jeremiah read everything he could about the work of Johannes Kepler the German astronomer who established the laws of planetary motion. Kepler had correctly predicted the Venus transit of 1631, but there is no record of anyone who witnessed it. Kepler stated that the *next* transit would be in 1756. Jeremiah, however, disagreed with this calculation. He worked out that Venusian transits occur in pairs, eight years apart, then either 105 years or 121 years later. This made the next one due in 1639, and it would be visible from Europe.
In 1635 Horrocks returned to Toxteth aged about 17. He did not graduate, although this was not all that unusual. Sometimes the expense of graduating was delayed until it might be used to gain a curacy or some preferment. We do not know what he did back in Toxteth, but he must have spent much spare time on astronomy.
In early 1639 in was appointed a curate of Hoole, near Preston, having


Transit of Venus 2004: Michael Scully

recently taken orders in the Church of England, although, according to the received accounts, he had not attained the canonical age.
On Sunday 24 November, 1639, all but two of the members of the Earth's population had no idea of the momentous event which was about to happen. The first transition of Venus across the face of the sun since the telescope was invented. This transit can only occur when the Earth, Venus and the sun are exactly aligned. One of those men was

Jeremiah Horrocks. He had already written to his friend William Crabtree, urging him not to miss the once-in-a-lifetime event.

Jeremiah's observations of the transit began at 3.15pm. He had attended his duties at the church and the service had ended just before 3pm. He had set up his equipment earlier in the day so that when he returned for the alignment, he only had minor adjustments to make to his telescope. He focused the sun's disc onto a piece of card and traced around it. Then he saw the small black spot (Venus) starting to edge across the solar disc.

'I watched carefully on the 24th from sunrise to nine o'clock, and from a little before ten until noon, and at one in the afternoon, being called away in the intervals by business of the highest importance which, for these ornamental pursuits, I could not with propriety neglect. But during all this time I saw nothing in the sun except a small and common spot. This evidently had nothing to do with Venus. About fifteen minutes past three in the afternoon, when I was again at liberty to continue my labours, the clouds, as if by divine interposition, were entirely dispersed, and I was once more invited to the grateful task of repeating my observations. I then beheld a most agreeable spectacle, the object of my sanguine wishes, a spot of unusual magnitude and of a perfectly circular shape, which had already fully centred upon the sun's disc on the left, so that the limbs of the sun and Venus precisely coincided, forming an angle of contact. Not doubting that this was really the shadow of the planet, I immediately applied myself sedulously to observe it'.

Jeremiah was overjoyed. He drew the position of the black spot on the card and watched avidly over the next few hours, tracing his observations and timing each one. Thirty miles away, Jeremiah's friend William Crabtree had also made preparations to view the transit, but it was too cloudy. However, just before sunset, the clouds cleared and he was able to witness the spectacle. He wrote that he was 'rapt with joy' and confessed to a 'womanly display of emotion.'

The 'Father of British Astronomy' had a tragically short life (he was just 22 when he died) Thanks to him, Venus transits can be predicted with accuracy. The most famous took place in 1769 when the British explorer Captain James Cook, sailed to Tahiti in order to observe the transit.
In 1874, Horrocks was eulogised with a plaque in Westminster Abbey.

John Keane

LUNACY

My Lunacy continues unchecked and has led to the development of a lunar observing programme based on Sky and Telescopes Lunar 100. The Lunar 100 is the Moon's equivalent to the Messier objects for deep sky observers. The Lunar 100 was created in 2004 by planetary scientist Chuck Wood in association with Sky and Telescope Magazine. It contains a list of 100 Lunar features to observe, starting from easy features such as earthshine, and the difference in appearance between the lighter highlands and the darker lowlands, to volcanic domes, riles, submerged craters and so on. The good thing about the Lunar 100 is that most of it is observable with a small scope and an awful lot of it is doable with binoculars. IFAS, (the Irish Federation of Astronomical Societies) have gotten on board and will issue certificates to participants. You can find a lunar observers pack on our website. This pack contains printable map of the moon and list of the lunar 100 and a booklet which has info on when is the best time to see the features, and a handy list for recording your observations. If you like you can also order the lunar 100 card direct from Sky and Telescope. There is also much more info and a history of the lunar 100 available at http://skytonight.com/observing/objects/moon/ . Above all this should be fun and rewarding and help us to learn a little bit more about our nearest neighbour. But to get the ball rolling,and encourage you to get out and observe, Kerry Astronomy Club will kindly donate a prize to the first person to complete and record the lunar 100. The prize is yet to be decided but as soon as we know we will let you guys know. Hopefully this will turn out to be a fun and rewarding experience for all of us.

Trevor O'Donoghue

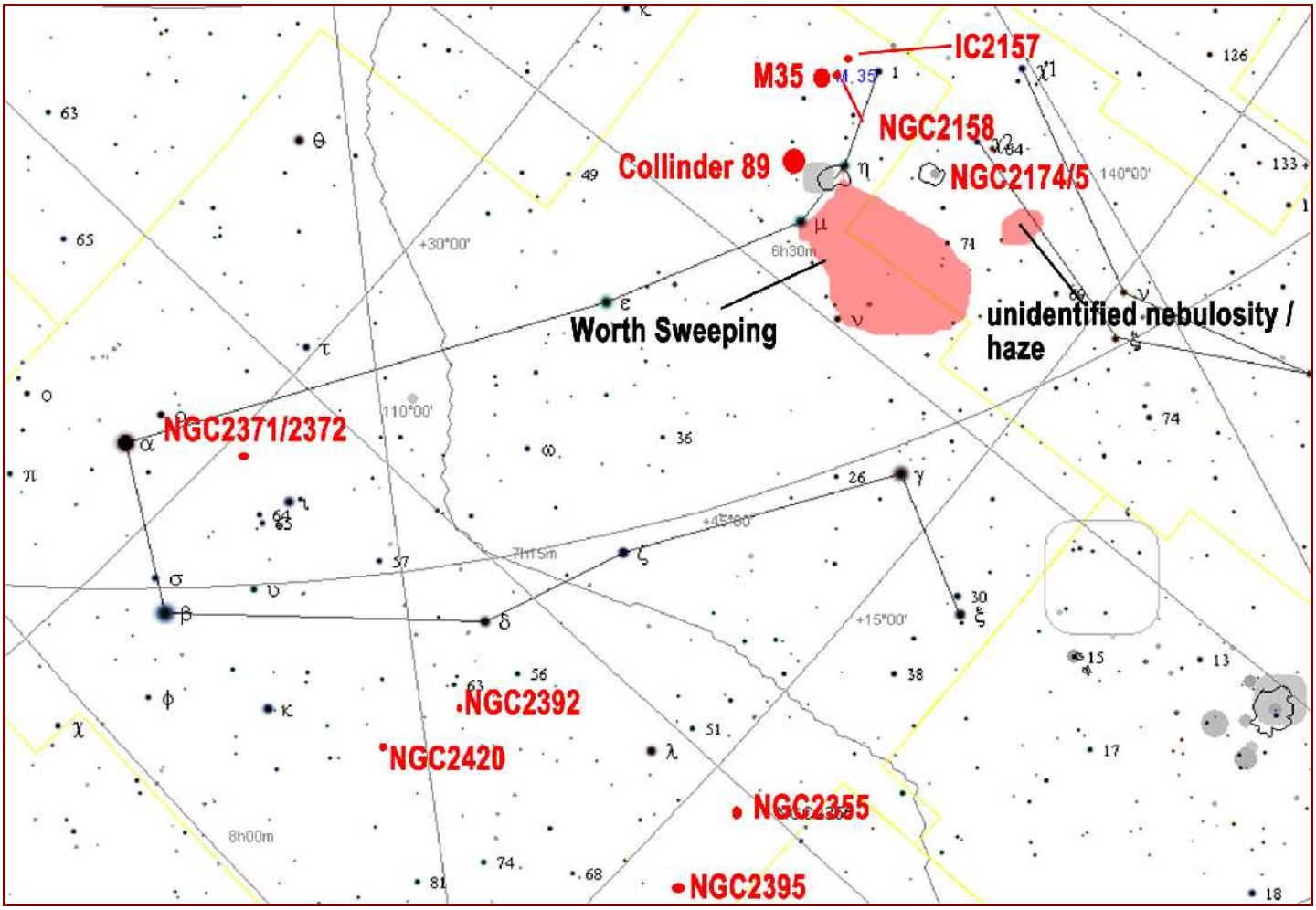
OBSERVING REPORT(s)

Kerry Astronomy club held an observing session on Saturday 17th February at Banna Beach. There was a small crowd present, but we had clear skies. We had a pair of ETX 70's and 8" and 8.75" dobs. We started off the night just jumping from one highlight to the next and enjoying the views. In the last hour or two we swept up all the Messier objects in Ursa Major, Canes Venatici, Cassiopeia, Gemini, Auriga, Orion, Taurus, Canis Major, Leo and Cancer, Earlier we covered Andromeda and Lepus. We also picked up M57, M13, M46, M47 and M34. We were on a roll at this stage so we had a crack at the Coma / Virgo region but We never really got to grips with this area. The cold and too many faint fuzzies, too close together beat us. This is one for the next night. We also had some of our best views of Saturn of the season so far. The Cassini division was constant throughout the evening and a lot of Saturn's moons were also visible. There were some right in close to the planet that flickered in and out of visibility. Lots of detail and shading on the planet was visible. In moments of exceptional seeing the view was picture perfect and it was a great way to finish up the evening.

On 10th February at St Marys parish Hall in Killarney we held an open night. This was our first visit to Killarney so we did not know what to expect. We also hoped to get to do some observing of Saturn, but the weather conspired against us. We had a number of visitors throughout the evening, and while we were not rushed off our feet, we managed to talk to everyone and we even signed up a few new members. So welcome to the new members and we hope to see you again soon either at one of our meetings or at an observing session.

On the 24th Feb we held our first public observing session in Killarney. We were due to kick off at 8.30pm. I loaded up the car with the dob and the 70mm skylux refractor. When I got to the site there was 100% cloud cover. I reckoned, I'd be home in 20 mins. Soon enough a father and his two young kids arrived, along with some gaps in the clouds. Rather than set up the dob and wait for it to cool down, I pulled out the skylux and turned it on the moon. Lots of happy faces. A few more people arrived and shortly another member and his scope. Eventually Saturn poked out through a gap in the clouds and we duly turned our scopes on it. What can I say, the kids, parents and all the adults were blown away. It was a thoroughly enjoyable evening and it just goes to show, that there is (almost) as much pleasure in sharing the simple pleasures of the night sky in a 70mm refractor as there is in hunting down faint clusters and fuzzies in a larger scope.

Trevor O'Donoghue



GEMINI

For this issue I will be looking at the constellation Gemini. Most of the observations for the column were done from what was initially an excellent dark site on the outskirts of Castleisland in Kerry, but conditions deteriorated throughout the night. Consequently when I refer to binoculars, i am referring to 10X50's, unless I specify 20X80's as they fogged up early in the evening.
The milky way runs through Gemini and as such makes Gemini an interesting place to sweep with a wide field scope or Binoculars. If you observe nothing else in Gemini, at least sweep the milky way as it runs through. Gemini is also home to the heavenly twins Castor and Pollox and a showstopper of an open cluster M35. Most people are probably familiar with this cluster, but southwest of it and easily out shined and out sized by M35 is the open cluster NGC2158. NGC 2158 appears as a small hazy spot in binoculars but this condensed cluster shows some resolution in a telescope under high powers. It is perhaps a fifth the size of M35 and is about 5 or 6 arc minutes in diameter It is however no means an impressive cluster to look at in isolation but it does however make a nice contrast both in size, distance and age with nearby M35. M35 is about 2700 LY away and about 110 million years old while NGC 2158 on the other hand is over ten times older and lies at about 16000 light years away. Photos of the pair show that NGC2158 contains a lot of older more evolved red stars. Why not have a look for yourself and see the difference in colour and size between the pairs. Also in this region is IC2157 another small cluster, similar in size and brightness to NGC2158. Staying in and around the M35 but about 3 degrees to its south west and easily within the same binocular field of view we come to Collinder 89.

This Loose open cluster is about one and a half times the size of M35 and is easily picked up in the Binoculars. In the telescope it shows as a smattering of stars, split into two different regions, with the north having more stars than the south. While you are in this region why not drop down south a degree or so and browse around the region to the west of ETA Geminorum. To me this seems to have some nice stellar associations. If you keep going further south there is another region that will repay sweeping with the scope and that is the region bordered by eta, mu, nu in Gemini and 71 Orionis. This region is again chock full of clusters.

Apart from M35, Gemini is also home to a fine planetary nebula, The Eskimo Nebula, NGC 2392. I had a look at this in 10X50's, 20X80's and in a 8.75" dob. It is visible in hand held 10X50's as an elongated or tight double star, but only just. The 20X80's show it as distinctly separate from its stellar neighbour and indeed with averted vision it seems to puff up a bit. In the dob under low powers it appears as a greenish blob, that again has a touch of the blinking planetary about it. Under higher powers, more of the structure of the nebula could be seen. It has a bright condensed core, which is easily visible and a faint outer layer which is easy to spot with averted vision. I will definitely be coming back here for another look.

While we are on planetaries, if we jump to the north about 8 or 9 degrees we find NGC 2371-2372, . This is one for the scopes only, and you probably will need at least a six inch scope to pull it out of the background. It appears faint and oblong when viewed head on but averted vision shows that it is lobed.

Moving back to the Eskimo, but a couple of degrees east and slightly north of it lies, NGC2420, I stumbled onto this while looking for the Eskimo in the dob. Under about X50 it

appears a s a small open cluster, with 10-15 stars resolved over a hazy patch, perhaps 1/5th the size of the full moon. And is slightly elongated.

About 7 or 8 degrees south south west of NGC2420 lies a pair of small open clusters, NGC2355 and NGC2395. NGC2355 is not visible in the binoculars and in the dob with low power it is a fairly condensed cluster with lots of faint stars and some haze visible. It is about the same size as NGC2420. NGC2395 is another faint and very sparse open cluster. It is about the same size as NGC2420 and NGC2355 but is a different shape. It is shaped like an extremely small Hyades or like the top of the Xmas Tree Cluster. This is not really very prominent and I nearly missed it. Before I wrap up, I just want to mention a region in Gemini that extends into Orion. Follow a line from M35 through NGC 2174/5 and on down for around the same distance. Under 10X50's and from a dark site, you will come across a wide and large patch of nebulosity that does not seem to be marked on any of the atlases I have looked at. If you get a chance, check it out and let me know how you get on.

Trevor O'Donoghue

MEMBER PROFILE

PADDY STACK

I have been interested in Astronomy as far back as I can remember. Some of the earliest influences on me were of course science fiction programmes such as Star Trek and Battle star Galactica. The TV series Cosmos was also a powerful influence. However, growing up in a dark rural area like Ballinprior outside Banna was a great help (though its not so dark now). In such conditions one cannot help but to notice the stars. I learned my first two constellations from my parents. My Father would often point out the Plough and my Mother showed me the "T" for St. Teresa (Orion). Everyone in my neighbourhood would have been familiar with the Milky Way as it was as obvious as the mountains. People from a city area might find that hard to believe! One of my earliest observation sessions happened purely by accident. One evening my Brother and his friends (who were not particularly interested in Astronomy) were looking at a three quarter waxing moon with a pair of 10X50 Binoculars. One of them exclaimed that he could see a rainbow on the Moon. I was young at the time but I was fairly certain that there was no rain on the Moon. When it was my turn to look I could indeed see what seemed to be a small arc of light protruding into the terminator at the top left hand corner of the Moon. I could not figure out what it was but it fascinated me. I would always look out for that phenomenon every three quarter Moon but it did not show as dramatically as before. I now know that what we saw that night was the exact lunar phase where the terminator passes through the bay of "rain bows". Later I acquired a pair of 16X50 binoculars. During a frosty night with perfect conditions I managed to see the Moons of Jupiter. I will never forget the shock.

The biggest problem for me growing up was that hardly any of my friends or neighbours were interested in Astronomy. I was very much on my own. I could really have done with an Astronomy club back then! Most of the books or magazines that came my way were too complicated and turned me off. Some respite came when I got a children's Astronomy book from the library and my sister gave me a 50mm Tasco refractor. I can't remember the name of the book but it was excellent. It was very practical and showed you how to find all the other constellations once you knew where one constellation was (I already knew two). The scope had a lousy tripod mount but the optics were not bad at all and I got some good views of Jupiter, Venus and the Moon by removing the tripod and propping the scope on a wall.

In early 1986 Voyager 2 flew by Uranus and Giotto flew by Halley's Comet. I was fascinated by both events and a love of interplanetary probes was fostered. Maynooth's Susan McKenna Lawlor had an experiment on-board Giotto and I found that very impressive. I ended up going to Maynooth myself in 1989 and I did a degree in Physics. I actually didn't get to do much Astronomy in Maynooth but I was involved in a college Science society that arranged a talk for a relatively unknown David Moore who had just founded a relatively unknown club called Astronomy Ireland.
Shortly after graduation I immigrated to the US and I was based in New Mexico for over three years. Despite having received a gift of a high quality 60mm refractor with a good equatorial mount, I actually did very little Astronomy. New Mexico has some of the best skies for Astronomy in the world but I lived in a relatively lit up area and was very busy at work. I did get excellent views of comets Hale Bopp and Hyakutake and got to see a rocket vapour trail. During trips to Alamagordo I got to see old Apollo capsules and Saturn 5 parts. I drove past Holoman air force base which is a back up shuttle landing strip and I payed a visit to the "Very Large Array". Another road trip took me to Los Alamos New Mexico and Meteor Crater in Arizona.

After New Mexico I lived near Portland Oregon for over a year. Despite the fact that the skies are far worse than in New Mexico and I lived in an area with even worse light pollution, I actually did a lot more Astronomy while there! I lived in an apartment with a balcony. The balcony had a cupboard where I kept my scope. While the kettle was boiling each evening after coming home from work, I had already hopped between planets, crescent moons and brighter deep sky objects. Convenience is important! During this time I also purchased a pair of 20X80 binoculars. I returned home to Ireland for good during the Millennium. I live in Ardfert now and I work in Abbeyfeale. I was anxious to get back into Astronomy shortly after arriving home. In the spring of 2003 I attended a talk by David Moore given in Killorglin. It was organised by Eamon Cregan of Ballybunion. Shortly after that a few of us got together and we founded the Kerry Astronomy club in February 2004. I purchased a 10'' Newtonian on a Dobsonian mount in 2004. I don't get out observing as much as I would like but my knowledge and interest in Astronomy has rocketed since the foundation of the club. The best thing about the club are the other members from whom I have learned so much. I started building a house shortly after the foundation of the club and that played havoc with my Astronomy. I live in a fairly dark area now so I hope to increase my observation time in the months and years to come.
My next plan is to win the lotto and take up astronomy full time.

Paddy Stack

OUR NEW LIBRARY

As mentioned in a previous edition we were promised a lot of past issues of Sky and Telescope magazine. I am happy to announce that we have about 4 or 5 years worth from the late 90's and early 00's. I will eventually get around to indexing these and publishing the info on our website and as handouts at a club meeting. There are a lot of interesting articles in these magazines and they make for some interesting reading.

THE PLANETS FOR SPRING

Mercury – After its inferior conjunction in February, Mercury may be visible in the morning sky during the second half of March as it rises before the Sun. The end of may sees it returning to our evening skies

Venus – Dominating the western sky, Venus continues to climb higher in the sky after sunset, and becomes more prominent as spring moves into summer.

Mars – not best placed for observing in spring

Jupiter – Is in the constellation of Ophiuchus and becomes better placed for observation as spring progresses. Look for it low in the southwest very early in the morning during March and becoming an evening object in May.

Saturn – Well placed for observation throughout spring but getting lower in the west as spring ends

Uranus & Neptune – Are not well placed for observations this month.

Trevor O'Donoghue

LUNAR ECLIPSE

What a disaster, clouded out for almost all of it. Kerry Astronomy Club held a public observing session in the Aquadome car park in Tralee for the eclipse and it was very well attended, but unfortunately, the weather did not play ball. The rest of Ireland and the UK were clear, just us in the southwest who missed out because of the clouds. From Killarney it was possible to make out the moon getting smaller through the clouds, but it completely clouded over for all of totality, just clearing up to allow me to catch the last 15-20 mins as the shadow of the Earth left the Moon. For those interested. There are a lot of pictures of the eclipse at www.irishastronomy.org

FEBRUARY TALK

For those of you who missed it, we had a wonderful talk on the sun given by Claire Raftery of TCD. Claire is studying for her PHD in Solar Physics and has spent some time working in the control centre for the SOHO satellite. Claire's talk

Claire Raftery pictured with Kevin Lawlor whose hard work was responsible for getting Claire to speak to us

explained some of the phenomenon which occur on the Sun in simple terms and brought us up to date, with the latest missions and research on the Sun. Claire's own research focuses on the problem of coronal heating. This is where the corona of the Sun is heated up to temperatures in the region of 1-2 million degrees centigrade and parts of the corona can reach 10 million degrees. No one has yet given a satisfactory explanation for coronal heating and whoever solves this mystery will no doubt have their hat thrown into the ring for a Nobel Prize.

WRITERS WANTED

Hi Folks. Good news, Now is you opportunity to help out your local astronomy club. We are looking for a couple of volunteers to write a little for each issue of Spéir. One person to look after the review section, which is missing from this issue. All that is involved is to write a few words about a book / website / telescope/ binocular / eyepiece / piece of software etc four times a year. There is nothing else too it. The second vacancy is for someone to write the column on what not to miss in the sky over the next few months. This is just making sure people will see the highlights of the sky for each season. For the past few months it would have been M42 in Orion, the clusters of the winter sky and Saturn. If anyone is interested in one or both positions or has any other suggestions or columns they want to write, then let me know. All articles are welcome. You can get me at 087 6866084.

PICTURE POST

Michael Scully's pic of the moon and Satun on their Close approach on the 2nd Feb.

Yet another Michael Scully photo. This time of nebulosity in Orion

design, production and editing
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Kevin Lawlor took this picture of a setting Venus over Banna during February