Stargazey Pie!

A slice of Highlands astronomical life!

Tues 6th Sept 2011

INTRODUCTION

The September meeting was well-attended and included such highlights as the revelation of a newly enhanced telephone contact system, a talk on the latest mission to Mercury and the usual topical talk and reports of the club's latest doings. Chairman Arthur Milnes was taking some time out from his "Gentleman Adventurer" role, so was present to open the meeting.

- **Child Protection Policy.** Pauline, Paul Jenkins and James McTaggart have reviewed recent legislation and guidelines. In the light of this the committee has approved a revised version which is available on the website and at the front desk at future meetings for parents of Youngstars.

- **Can You Help? Break-out Groups** - Help is required to organise these. Gordon McKenna takes on this role, but, as he is away on business some of the time, he is asking for a member to assist him. Volunteers contact Gordon or Pat Williams.
  Technology Team -Smithton-Culloden Free Church has state of the art technology. HAS requires a member with some experience in this field to join the Technology Team. Please contact Paul Jenkins.
  James Webb Telescope - http://goo.gl/mvaOQ Please consider this petition re probable cancellation of this space telescope mission.

- **2011-12 Programme Update With Dates For Your Diary.**
  Saturday 17th September - ~~**HAS visit to the Glasgow Science Centre.**~~ **CANCELLED** as insufficient numbers to justify the cost.

  Saturday 3rd December - **HAS Christmas Dinner**. Pat Escott would welcome suggestions for a suitable venue; ideally in the centre of Inverness in case of snow and with HAS having sole occupancy. We anticipate around 40 members and partners attending.

  Saturday 21st January from 10:00 to 16:00 - **Outreach Day** at the Eastgate Centre, Inverness with viewing at the observatory from 20:00 to 23:00. The BBC is hosting another Stargazing Live Day so details may change.

  Volunteers will be needed for most of these events. Please contact Pat Escott if you can help.

- **Membership.** We currently have 86 members. We have come close to, but never reached, 100. Could this be the year we make our century? If we don't make it any other way we'll have to consider cloning current members…

- **Tea-break.** The tea-break has been extended to half an hour to allow members to enjoy the club atmosphere in the new cafeteria. Please let us know if you approve?

- **Observing Sessions - JSL Observatory.** Solar Saturdays on the 17th and 24th Sept are the final planned ones for 2011. The Observatory will be open, weather permitting, from 14:00 – 16:00 on these dates.

  Evening viewing

Date	For Whom	Time	Supervisor
Fri. 23rd Sept.	public and members	21:00 – 23:00	Pauline
Sat. 24th Sept.	members and guests only	21:00 – 23:00	Pat W
Fri. 30th Sept.	public and members	21:00 – 23:00	Paul J
Sat. 1st Oct.	members and guests only	21:00 – 23:00	Paul J

  Please check www.spacegazer.com before setting out.

  Where possible, if a members' and guests' session is cancelled, the supervisor will put on an extra session. Please check the website for this.

  Observatory **–** Members are needed to train as supervisors and as assistants, especially for the Friday public evenings. Please contact Gerry or Rhona. Pat Escott has volunteered to train as a supervisor. Welcome to the team Pat! Your life will not be the same again….

- **August Meeting and Stargazey Pie.** 41 people attended the August Meeting and the raffle raised £30. The August issue of the *Pie,* written as ever by Antony, was sent to the 46 members who were unable to attend the meeting. If you did not receive your copy please contact Pat Williams.

- **HAS Exhibition.** The HAS Exhibition at the Scottish Archive Centre at the Bught is now over. Thank you to all who contributed and to Janet Baker for inviting us to make an exhibition of ourselves. www.highlandarchives.org.uk

Shooting Stars: Other Important Club News!

The biggest news item for the club this month is the "new and improved" Telephone contact list.

If you see an astronomical event e.g. an aurora, noctilucent clouds or an impressive meteor shower which you believe other members would be keen to observe please telephone:

Pat Williams (not in October 2011), Paul Jenkins or Pauline Macrae

Please make sure that you actually speak to either one of Pat W, Paul J or Pauline. Please do not leave a message unless you are unable to speak to any of them. The person contacted will then initiate the alert.

H.A.S. has automated its Telephone Alert system. You will receive a text on your mobile phone or a voice message if you opted for landline contact. A few people chose either or both and will receive the message twice. Latest times may have been altered slightly, upwards to the nearest hour before midnight and back to 23:59 for those who opted for later than midnight but not for 24 hours.

The latest times are 21:00, 22:00, 23:00, 23:59 and any time over 24 hours. For the first four I suggest we notify from 07:00 until latest time specified. You will not receive a message if it is

later than your latest time on your membership form, or if you did not fill in that section, or if you ticked "no".

By text: the message will be headlined H.A.S. and will specify what there is to see and which part of the sky to look in.

By landline: you will hear an automated female voice say "Hello this is a free message. Press 1 to hear it or 9 to reject it. You will not be charged for this call."
*<At this stage press **1** if you want to hear the message>* Beep.
The message will then be read out. It will be headlined Highlands Astronomical Society and will specify what there is to see and which part of the sky to look in.
"To confirm you have heard it press 1. To hear this message again press 2."
*<If you heard it satisfactorily, then press **1** >* Beep.
"Message acknowledged. Thank you."
This system does not allow messages to be left on answering machines or BT's 1571. It will try again once or twice at 10 minute intervals if unanswered. If you have a viewer display system it shows as "unavailable".

The system depends on you making contact. We know that when spotting an aurora etc. all you want to do is to get out there, look and photograph. Please take a minute to phone Pat, Paul or Pauline first, whatever time of day or night.

If you wish to clarify or alter your contact details please phone Pat W or e-mail before Tues. 27th September 2011 or from November onwards.

The cost of each 160 character message to H.A.S. is 4.3p. We will trial it during 2011 - 2012.

Other items of note are that Dr Lyndsay Fletcher will be speaking to us next month, with a talk entitled *"Solar Activity as seen by NASA's Solar Dynamics Observatory".* Dr Fletcher has spoken to us before and was very well received, so this will be an exciting meeting.

Arthur made the point that with so many events and such like taking place within the Society, volunteers are a much-valued commodity. If you feel you can help in any way, please do come forward and let the relevant organiser know.

Sadly, the club's visit to the Glasgow Science Centre has been cancelled. This is due to the fact that only 17 people were committed to going, and that included some family members. For day trips like this to be viable, there is need of a larger number of members who will commit to attending. Thirty or more makes it worthwhile, as there are transport costs and entrance fees to consider. For fewer members than that it is not fair to subsidise such a small percentage of the membership to such a large financial extent.

For future expeditions – and if you can suggest any, please feel free to – please understand that if too few members opt to go they may, like this trip, be cancelled. (The trips, not the members…)

To finish on a positive note, the observatory and telescope are all ready for the forthcoming season, though a few more volunteers (either as hosts or assistants) would be welcome. The telescope is pointing very precisely and the views (when weather conditions allow) are stunning. Your membership fee includes full access to the observatory, telescope and all observing events, so please do come along and experience it for yourself!

The Main Event:
'Mercury Messenger: Last Frontier of the Terrestrial Planets'

When asked for a CV, John Rosenfield merely requested that it just be mentioned that he lives under dark skies. Consider it mentioned, John!

John started off by explaining why Mercury is called Mercury. Mercury is the Roman messenger of the gods – son of Jupiter and Maia Maiestas, one of the Pleiades. Similar to Hermes in Greek mythology, Mercury is spontaneous, swift and volatile – perfectly matching the qualities of the closest planet to the Sun, hence the name. Mercury is also on the emblem of the Royal Signal Corps, indicative of his "messenger" status.

We were then shown the mission statement from NASA's website for Mercury Messenger. Available here: http://starbrite.jpl.nasa.gov/pds/viewMissionProfile.jsp?MISSION_NAME=MESSENGER it lists the questions that the Messenger probe hopes to answer in the coming months and years. Some of these questions were posed by the famous Mariner 10 mission in 1973, proving that the more we learn in our study of space and the solar system, the more questions are revealed to us.

We were shown how complicated a task it is to get a probe in**to** orbit around a planet so relatively close to us. The path which Messenger followed looked indeed very like a celestial plate of Spaghetti, as it used several "Deep Space Manoeuvres", including gravity assists or slingshots, to eventually approach Mercury the correct way.

Being so close to the Sun, the probe has a space-age version of a parasol to shield the intricate and delicate devices tucked away in its core. The heat shield keeps the instruments at constant 20 degrees Celcius, while the outer surface of the shield can reach 370 degrees. The shield has to be angled so that it faces the Sun at all times or the instruments within Messenger would quickly be rendered useless. To this end, Messenger must remain in a very eccentric orbit – another challenge for the mission designers at NASA.

As the findings of Mariner 10 have inspired the questions that Messenger is asking, so shall Messenger inspire BepiColombo – the next Mercury mission, being jointly developed by the European Space Agency and Japan. It will have two parts: the Mercury Planetary Orbiter (MPO) to

map the planet, and the Mercury Magnetospheric Orbiter (MMO) to investigate its magnetosphere. The future for our investigation of Mercury is looking very bright!

Thanks John, for telling us about a fascinating mission to Mercury. The webpage for further mission updates is http://www.nasa.gov/mission_pages/messenger/main/index.html

Highland Skies – September

Finally! Summer is nearly gone and autumn looms, complete with dark nights, reasonable temperatures, sensible times for nightfall… could September be the 'Perfect Month'? It's certainly a good candidate and one of my favourites.

The Milky Way becomes obvious once again in September, arcing overhead and through the constellations of the Summer Triangle: Aquila, Lyra and particularly Cygnus. The Great Rift of Cygnus is a dark lane of obscuring matter which blocks the glow of the Milky Way's myriad stars, and on nights of excellent transparency can be visible to the naked eye.

Through a pair of binoculars or a small telescope with a wide field of view the scene becomes a vista of magnificence. Stars fill the field of view in clouds, sometimes in brighter knots or clusters, sometimes in strings. Sweeping through this area is one of the most relaxing and rewarding ways to spend time at the eyepiece. You can't help but stumble across "random" clusters and then head for the sky-charts to see if you can identify what you're seeing – not that it matters if you can't as the experience of viewing is the important thing.

Having said that, if you'd like to attempt to identify what you're seeing, you might like to know the designations of some of the objects to keep an eye out for. Heading northwards through Cygnus from Albireo the first cluster is NGC6834 – a small sparse cluster with a hint of nebulosity around the brightest of a string of four stars. M56 is a more rewarding cluster the same distance away from Albireo but on the other side from NGC6834.

Heading northwards and approaching the central "cross" section of Cygnus, NGC 6871 stands out with a smattering of bright blue-white stars close together, with a few more scattered further out from the central part of the cluster. NGC6883 nearby holds a handful of bright stars but they are hard to detect as a cluster as they are located in a very dense part of the background star-fields. Far more rewarding than any of the NGC clusters mentioned, but still quite subtle as far as open clusters generally go, is M29. It is quite close to the bright star Sadr in Cygnus, and has an overall magnitude of 6.6, even though again, only a handful of main stars are evident. They form an interesting asterism though, looking similar to a lipped tub or beaker with clouds of stars & slight nebulosity in the background.

That takes us up to the top of Cygnus (the tail end) but it would be remiss of me not to mention two highlights from further south. Below Albireo is an obvious asterism of stars just visible to the naked eye that forms the appearance of an upside down coathanger. It is, unsurprisingly, known as "The Coathanger". A wide field of view and low power are best used to observe this object. Apparently, only six of the brightest stars are part of a cluster, with the remaining stars that form the asterism being merely random "line of sight" coincidences. They just happen to be in the right place at the right time. Or, conversely, maybe we are…

And then of course, nearby in Vulpecula (the Fox) is the wonderful planetary nebula: M27, the Dumbbell. Visible in any telescope this rewards all observers, but is particularly good with medium to large apertures, medium power and an OIII filter inserted. Nothing wrong with huge apertures either!

So those are some of the objects that are always available in Cygnus (not all of them; there are many more) but there is also something in the region at the moment that is merely passing through the area. Slightly below the borders of Cygnus, heading from Sagitta (the Arrow) towards Hercules, Comet Garradd is set to (hopefully) reach magnitude 7. It is a fine sight in telescopes and binoculars, but hasn't yet reached the hoped-for brilliance of becoming a naked-eye object.

I won't even bother to mention Jupiter, as I'm sure you're all keeping an eye on the king of the planets already. Clear September skies to you all!

Next Time

Well, next time we have Dr Lyndsay Fletcher visiting us again with an exciting sounding talk on "*Solar Activity as seen by NASA's Solar Dynamics Observatory".* The meeting will be at the Smithton-Culloden Church Hall on Tues 4th Oct, starting at 19:30. Please be in attendance at 19:15. The Youngstars group for 8-14 year-olds runs from 19:00 – 19:30.

So, there's a lot to look forward to at the next meeting, including ongoing observatory reports, newly extended tea-breaks, and discussion and breakout groups. See you there!

Antony McEwan