

Caithness Astronomy Group - Public and Schools Solar Observing Activities

During the International Year of Astronomy, Caithness Astronomy Group held numerous public and school events, engaging the local population with the varied science and technology associated with Space and Astronomy.

Thanks to funding from the **IoP in Scotland** and the **Dounreay Communities Fund** in 2010, Caithness Astronomy Group (CAG) were able to purchase solar observing equipment that provided a new avenue for engaging with the local population and would complement our night time observing events.

The funding was used primarily as follows:

- purchase of solar observing equipment (hydrogen alpha telescope and associated equipment)
- solar educational material and display materials
- venue hire for public events

The remaining funds were used to part fund a visit by Solar Physicist Dr Lyndsay Fletcher who spoke to pupils studying physics from 3 local High Schools and gave a free evening public talk on "The Sun and Space Weather".

In the 6 months since receipt of the funding, CAG have been able to undertake the following activities.

- Public observing events were held at Bettyhill and Thurso during the summer months. An observing event was also held in Kirkwall as part of the family day activities at the Orkney International Science Festival.
- The solar observing equipment and educational materials were loaned out to 3 local high schools for extended periods to use during class time at their convenience.

When not being used for the above, the equipment was utilised for solar observing by CAG members. CAG intend to continue to make use of the equipment in this way and for any other suitable public and school engagement activities that may arise.

Having the opportunity to observe the Sun using specialised equipment and gain a better understanding of our nearest star is something that has been possible thanks to provision of the funding for the solar observing equipment. We estimate that during the short period of use thus far, observation of the Sun has been brought to:

- in excess of 250 members of the public
- around 200 pupils of all ages from 3 local high schools

We hope that this unusual observing opportunity will have been memorable to all and may have sparked or re-kindled an interest in STEM subjects and the universe in which we live.

Gordon Mackie
Caithness Astronomy Group

The following pages further illustrate how the funding was used.

Public Events

We were fortunate enough to have good weather at two of the three public events we organised this summer. The event at Bettyhill fell foul of thick cloud and rain, but the events at Thurso and in Kirkwall saw the clouds part just in time for observing to take place.

Caithness Horizons and main shopping area, Thurso

Caithness Astronomy Group Open Day

Caithness Horizons, Thurso
Saturday 14th August
(1330-1530hrs)



FREE ENTRY
All Welcome

Come along and find out more about the universe we live in and about the activities of Caithness Astronomy Group

- See telescopes and other observing equipment. Find out from club members what can be seen in the night sky with amateur telescopes.
- Learn about our local star the Sun
- Solar observing – look through a specially filtered solar telescope to see the surface of the Sun in detail as you've never seen it before (weather permitting)
- Hands-on activities (for all ages) – make a sundial, star wheel & more



Event funded by:

**Institute of Physics
In Scotland**

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FAMILY FUN DAY: Tessa and Robbie Irvine try and re-assemble the Tossa model on display. PICTURES SHANEY MEDIA GROUP



PICTURES OF THE UNIVERSE: Bill Eaves from the Caithness Astronomy Group with some photos from their display.



MAKING WAVES: From left, Andy Ross talks to Aquamarine Power's Megan Richardson, Martyn Meynell and John Hancock about their Oyster wave generator model.

Family fun at Science Festival

DO you think it is possible to move an object using only the power of your mind? If you attended the family fun day this was just one of the fun activities which took up both floors in the King Street Halls on Saturday.

There were so many things on offer it is difficult to list them all, however the festival programme gave this description: "Generate your own wave power. Build a bridge. Turn a turbine. Practice your flying: from the Scillies to Unst via Kirkwall. Learn to recognise rocks and fossils. Grow a new taste and zero your waste. Make a lantern or a rain gauge. Connect the K'Nex to make an air-powered vehicle.

"Teach a robot to dance. Learn about programming computers. Test your body's capabilities at the SportStation. Wild flowers for bumblebees – identify the seed heads of flowers that support bees in the Orkney countryside. Astronomy drop-in sessions. Art and craft

activities. Porridge and pancakes available at lunchtime!" This gives you some idea of the range of attractions on offer, all of which were immensely enjoyed by the steady stream of people who visited.

It really was a family fun day as there were so many children enjoying themselves taking part in the huge range of attractions.

Another popular attraction was a solar telescope brought to Orkney by the Caithness Astronomy Group, which was used to see solar flares on the sun.

The Glasgow Science Centre hands on activities were also busy all day.

There were also many hands-on activities including arts and crafts projects for children to get involved in.

■ more Orkney Science Festival reports on Page 14 & 15

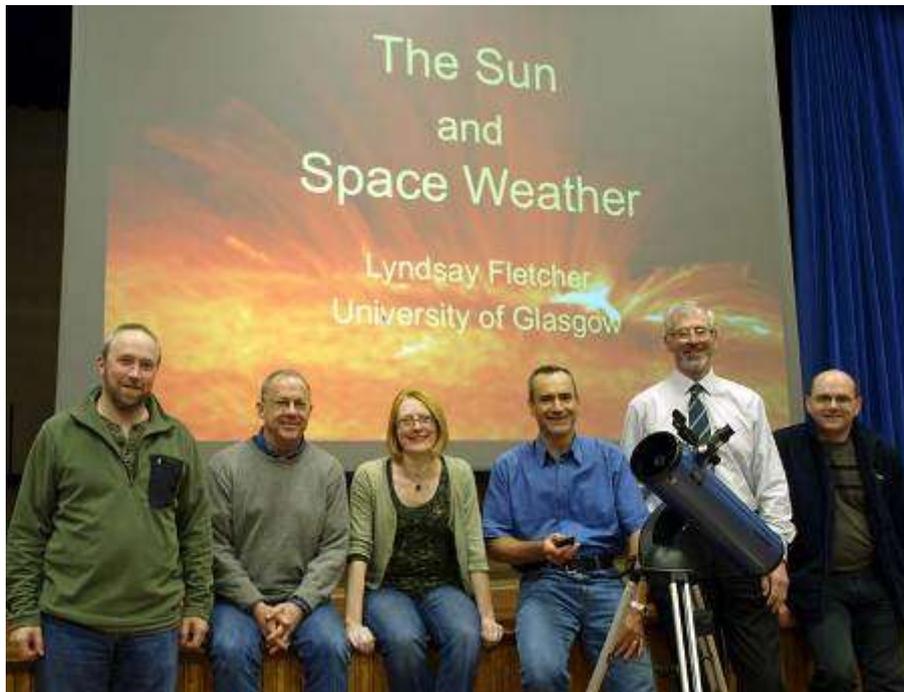


TECHNO DANCING: University of Dundee's Jon Urn shows Sween Worthington and Einar Steokan how to make a robot dance.



Learning about the Sun.....

Hosted by Caithness Astronomy Group, Solar Physicist Dr Lyndsay Fletcher gave a free public talk on “The Sun & Space Weather”



During her brief visit to Caithness, Dr Fletcher was also kind enough to speak to pupils from 3 local High Schools who were studying Higher and Advanced Higher Physics. By the time of Dr Fletcher's visit some of the pupils had already used the solar telescope funded by the IoP in Scotland and Dounreay Communities Fund, meaning they could relate some of the solar features discussed to things they had personally observed.

School Usage

Below is an article that appeared in the local press following a training session held for local high school teachers and CAG members that would be supervising the safe use of the solar telescope at observing sessions.



Caithness Astronomy Group (CAG) held a familiarisation session with the new solar telescope for local high school teachers at Thurso High. Pictured are (from left): Bill Eaves, of CAG, Sinclair Mackenzie, of Thurso High, Amanda Moseley, of Farr High, the Rev Ronnie Johnston, of Dounreay Communities Fund, Peter Darmady, of Wick High, and Peter Hardyman, of CAG.

Teachers learn more about county's new solar telescope

KEEN local stargazers are now able to get close-up daytime views of the sun after the purchase of a new piece of high-tech kit.

Caithness Astronomy Group has just taken delivery of the solar telescope thanks to funding from the Institute of Physics in Scotland and Dounreay Communities Fund (DCF).

The telescope has specialist filters that allow the closest star to Earth to be safely viewed during the day.

It has the ability to home in on the very hot hydrogen gas that makes up most of the often violent and dynamic lower atmosphere of the sun.

Previously, group members were only able to

look at it during their night-time get-togethers.

The telescope is to be made available to Thurso High, Wick High and Farr High to supplement curriculum work on physics courses.

The group is also running sessions open to interested members of the public. The first has been arranged in Caithness Horizons, Thurso, on August 14 between 1.30pm and 3.30pm.

The solar telescope cost £600 with a further £350 going on an astronomical camera that allows simultaneous image capture and viewing on a laptop. The IoP in Scotland donated £750 while £300 came from DCP.

The money leftover

is being used to pay for venue hire and posters, and educational resources.

The group is keen to warn people that viewing the sun with the naked eye or through binoculars, or a standard telescope, could permanently damage their vision.

The group has meanwhile arranged for Glasgow University's solar expert, Lyndsay Fletcher, to speak to Far North physics students in Thurso High School on September 17.

Dr Fletcher, who has appeared on BBC TV's *Sky at Night* programme, is to give a public lecture in the evening called *An Introduction to Our Sun and Space Weather*.

Loan Agreement

Caithness Astronomy Group Solar Observing Equipment

This records the agreement for loan of the Caithness Astronomy Group Solar Observing equipment (inventory overleaf) subject to the conditions stated below.

Loaned to:Sinclair Mackenzie..... (nominated person)

ofThurso High School..... (establishment)

Loan period:23/8/10..... to3/9/10.....

I agree to abide by the following conditions of the loan:

- To follow the safety precautions required for using the equipment as detailed at the equipment training session and on the supplied pre-use checklist
- To take reasonable care of the equipment and to report any damage that occurs
- Equipment will be used under the supervision of trained individuals
- To keep the equipment in a safe & secure location when not in use
- To provide brief feedback on its use

Note: It is extremely important that the safety precautions required for observing the Sun are made clear to all involved. Caithness Astronomy Group are not liable for any injury sustained through inappropriate solar observing activities associated with this loan.

Signed: 

Date: 23/8/10

Feedback

We hope you found the resources useful. Please provide feedback below. If you have any photos showing use of the solar observing equipment that CAG could utilise in the final report to the project sponsors please forward them to me.

Details of Use eg how many times, age range & no of pupils involved

S2 x 2 SS x 2
S3 x 2
S4 x 3

Usefulness of resources? eg did they have a positive impact, how could we improve?

Better response achieved with younger (S3+ under) than senior pupils

Additional feedback: Please provide any you have here or on additional sheets

Thank you
Gordon Mackie
Chairman, Caithness Astronomy Group
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Above to the right is an example school loan agreement and feedback form. The equipment has been out on loan to the 3 local high schools almost continuously since the end of August when the school year commenced. It is currently on loan to Wick High School where pupils studying physics and GCSE astronomy are making use of it.

CAG Members Usage

When not out on loan to local high schools, members of Caithness Astronomy Group took advantage to observe the Sun on the few occasions during the summer that it made an appearance from behind the clouds.

Interested passers by were always encouraged to come and "see the sun in a different light".

