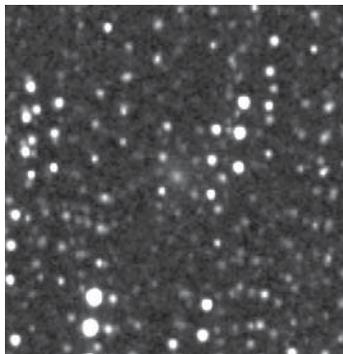


Comet Section

A spectacular Christmas comet in southern skies

When Terry Lovejoy discovered his latest comet, designated C/2011 W3, in the early hours of 2011 November 27 from his home observatory in Brisbane, Australia he became the only person to have discovered Kreutz group sun-grazing comets both from spacecraft imagery and from Earth-based observations. This new discovery held the attention of comet observers and scientists during the weeks leading up to the end of 2011.

First orbit determinations indicated that the comet was a member of the Kreutz group of comets. These are comets which are presumed to have come from a single parent object and all of the group follow a similar orbital path. Kreutz comets are sungrazers and they pass very close to the Sun's surface at perihelion. Predictions indicated that Comet Lovejoy would pass a mere 180,000km from the solar surface during its perihelion passage on 2011 December 16.02.



Discovery image, 2011 Nov 27.7 UT. Celestron 8 200mm f/2.1 SCT + QHY9 CCD camera. T. Lovejoy.

The fate of most members of this group has been total disintegration during their close approach to the Sun. The exceptions have been the larger members of the group which survive in some form and occasionally reappear from the

solar glare to become visible as brilliant naked eye comets. A famous example was C/1965 S1 Ikeya-Seki.

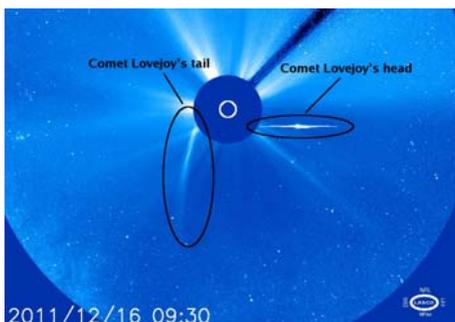
The consensus among comet experts was that C/2011 W3 Lovejoy would be destroyed at perihelion and that we would be able to watch its demise using instruments on board the solar monitoring spacecraft. However, comets rarely behave exactly as expected and Lovejoy survived despite being severely disrupted. It lost its tail before growing another one as it passed close to the solar surface. It then emerged into the southern dawn sky as a beautiful naked eye comet and it is now being described as one of the 'Great Comets'.

As the comet moved away from the Sun into darker skies the full extent of its form was

viewed and imaged by eager observers in the southern hemisphere. Some of the more spectacular images are displayed on these pages but there are many more on websites around the world. The most obvious features were seen in the tail. It was a gracefully curving structure 30° in length, and had within it intertwining structures visible to the naked eye. It provided



Terry Lovejoy and his C8 comet search telescope in FastStar mode.



Lasco C3 image of tail disconnection on 2011 Dec 16, 09:30 UT



The comet rising at dawn, 2011 Dec 22, 03:35 AWST (UT+8hrs), from Mandurah Estuary, W. Australia. Canon 5D2, 73mm, f/4, ISO3200, 13sec. Colin Legg.



The comet rising at dawn, 2011 Dec 21, 03:41 AWST, Mandurah Estuary, W. Australia. Canon 5D2, 73mm, f/4, ISO3200, 12sec. Colin Legg.



On 2011 Dec 23, 03:42 AEDT (UT+11hrs), the comet displayed a 30° tail near the horizon at Boorawa, NSW. This photo gives a sense of scale. Canon 400D, 50mm, f/1.8, 45sec, ISO1600. *Vello Tabur.*



2011 Dec 26, in profile against the bright Milky Way. From Boorawa, NSW, Australia. Canon 400D, 50mm, f/1.8, 153sec, ISO400. *Vello Tabur.*

an ideal opportunity for observers to employ modern DSLR cameras to capture its rare beauty as the comet hovered above the dawn horizon. Scientific observing was no doubt being done at the same time but the overwhelming sentiment from observers was one of awe.

The comet rose higher into the twilight sky as it receded from the Sun, but visually, its tail became more difficult to separate from the bright

portions of the Milky Way. The comet's head was invisible, a common feature of Kreutz sungrazers which relinquish much of their material during the very close solar approach.

The comet quickly began the process of fading from our skies and within months it will be lost from view.

We cannot employ that frequently used phrase 'we will never see its like again', because we know that we will. Another Kreutz group sungrazer will be on the way some day to repeat the spectacular performance of Comet C/2011 Lovejoy. Let us hope it happens sooner rather than later, and that next time it will also be visible from the northern hemisphere when at its best.

Denis Buczynski & Nick James

Web links

For an overview of spacecraft imagery of the perihelion passage:

http://sungrazer.nrl.navy.mil/index.php?p=news/birthday_comet_c1

http://sungrazer.nrl.navy.mil/index.php?p=news/birthday_comet

For an overview of the ground based observations:

<http://remanzacco.blogspot.com/>

For more additional material go to www.britastro.org/Lovejoy



2011 Dec 26, 17:46 UT, showing the bright central tail spine and 'invisible' head. Field 1.0×0.8°. Stack of 21×20sec exposures in mid-twilight. North up, West to right. ANU/Uni of Arizona/NASA/Robert H. McNaught, Uppsala Schmidt/Siding Spring Survey.



The comet and Milky Way, 2011 Dec 23, 17:10UT from Siding Spring Observatory, NSW, Australia. Canon 5D, 24mm f/4.0, 240sec, ISO800. ©2011 *Robert H. McNaught.*



From the President

Meetings and other public events form an essential part of the service that the BAA provides for its members. Even though the Internet has made communication with (and among) our members much easier, there is still nothing quite the same as the opportunity to meet fellow members and guest speakers face to face.

Not everyone, of course, is able to attend our regular Ordinary Meetings at Burlington House in London's Piccadilly, but we hope the fact that videos of those meetings are now available to download from the Association's website has made their content more accessible to members who are not London-based. If you have not done so already, I recommend that you take a look at the recordings of our November and December meetings, which were very well attended and included excellent contributions on a variety of topics from our distinguished guest speakers. These included our annual Christmas Lecture, given this year by Professor Dame Jocelyn Bell Burnell.

For those members who live in more northerly parts of the UK our meetings programme this session includes a one-day meeting in Leicester on Saturday April 28 and a weekend meeting in Aberdeen on September 7–9. In addition there is the annual Horncastle Astronomy Weekend, organised by Paul Money at Horncastle College, Lincolnshire, which will take place on September 14–16. Further details of all these events will appear in the *Journal* in due course.

The BAA Exhibition Meeting

At its December meeting Council considered carefully the results of the survey conducted recently to try to establish the views of the membership on the future of the Exhibition Meeting. Attendance at these meetings in recent years had fallen off, and it was clearly time for a review of what we offer. Council is very grateful for the views expressed by those members who responded to the questionnaire, and although discussions are still ongoing, it is clear that the membership is firmly of the view that the Exhibition Meeting should continue as one of the BAA's flagship events. There was also a very strong opinion that in future years it should be held not just in London, but also in other parts of the country in order to serve the needs of the wider membership.

Council has therefore decided to re-launch the Exhibition and to seek a venue for that re-launch in a more northerly part of the UK; we hope in future years to rotate the location of the meeting round several different venues in different parts of the country. More information will be given



The BAA stand at Astrofest in 2011. Come and see us again this year! (Photo by Richard Fleet)

as it becomes available, but we hope to create an event that will meet all our members' requirements and also draw in larger numbers.

Astrofest and Winchester

Although not a BAA event, Astrofest is a major attraction in the amateur astronomer's calendar, and once again the Association will set out its stall at this year's exhibition on February 10–11 at the Kensington Conference and Events Centre. If you plan to attend, do make a point of coming to see us at the BAA stand.

Finally, the Association's annual Winchester weekend is just around the corner, and we can look forward to another outstanding meeting in surroundings that encourage both relaxed sociability and the development of our astronomical skills. This event is always very popular – so, if you have not yet booked, move quickly!

I hope to meet as many of you as possible at the above events, none of which would be possible without the hard work of Hazel Collett, our Meetings Secretary, and that of individual event organisers. We are very grateful to them.

Bill Leatherbarrow, *President*

Mercury & Venus Section

Venus in 2011–'12: second interim report

The large gibbous disk

Immediately following superior conjunction, distant and tiny Venus sets very soon after the Sun. The large gibbous phase is therefore often under-observed, yet records of this phase are those most easily able to define the shape and extent of the characteristic, large Y- and psi-shaped dark markings which can almost always be seen in the ultraviolet and glimpsed – in part at least – in white light. At first it will be hard to make out any patches upon the tiny, full disk. But as it draws out from the Sun it will become larger, and markings will gradually appear, just as they do in the series shown in Figure 1. I often find that

the gibbous disk yields the most interesting views of the dark markings, but as dichotomy approaches the shaded terminator and bright limb gradually occupy a more and more significant fraction of the visible hemisphere, and less can be seen of the central disk.

Observations from the past can inform the present and we show here (Figure 1) a fine set of previously unpublished drawings by the late Henry McEwen made with a 127mm (5-inch) Wray refractor from Cambuslang, Glasgow, reproduced directly from his observational notebooks. I chose these from the many years and elongations available, for McEwen obtained a particularly long series of records of the high gibbous phase during the evening

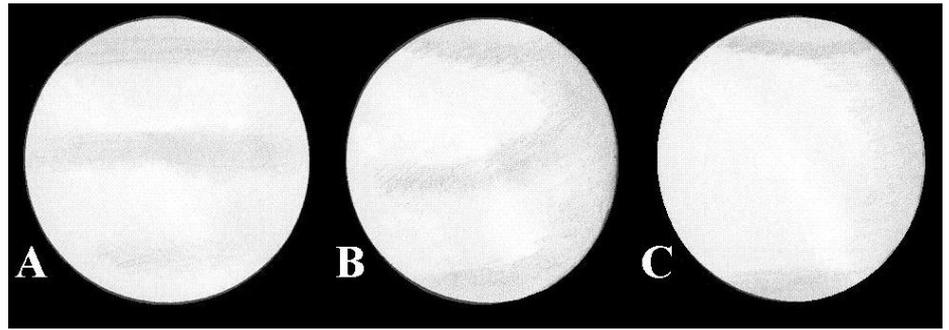
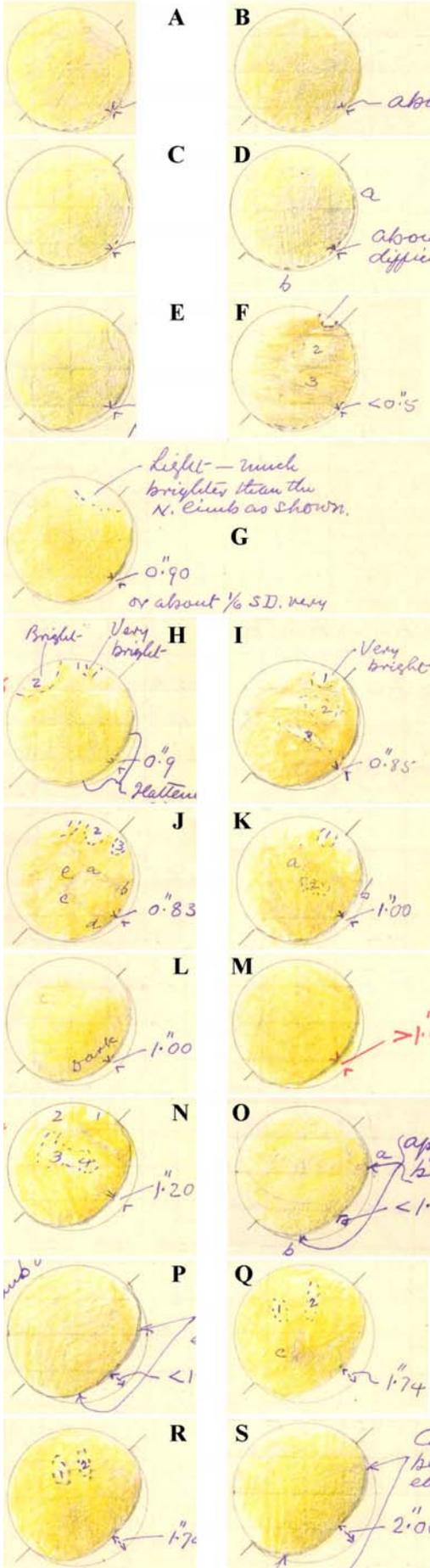


Figure 2. Recent drawings of Venus by G. Adamoli, 2011 Oct–Nov, 125mm Mak–Cass., $\times 150$; W44A blue filter. (A) 2011 Oct 5d 12:50UT; (B) 2011 Nov 9d 12:45UT and (C) 2011 Nov 18d 12:50UT.

elongation of 1938. Observations commenced on Saturday, April 9 and continued till May 27, during which time 33 drawings were made (19 being reproduced here), after which there was a long gap until July 1 by which time the phase was much reduced and dichotomy was just over a month away.

Recent observations

Since inferior conjunction a few observations have come to hand. These are entirely typical for the phase in question. With Venus the patient accumulation of data can at least yield long-term statistical information. This report summarises all work received up to 2011 Dec 9.

Picking up Venus after inferior conjunction from Sept 12 onwards, Gianluigi Adamoli (Italy) made a good series of observations (currently reported up to Nov 18). See Figure 2. The most persistent feature appeared to be the collars around the cuspidal areas, which were easier to see from Sept 23, on which date Adamoli reported N. polar shading and the S. polar collar. On Sept 28 he found both poles definitely shaded through a W44A blue filter but not with a W15 yellow filter or W25 red filter. On Oct 5 the S. pole was the more shaded, with a faint N. collar and an elusive equatorial shading. Impressions of polar col-

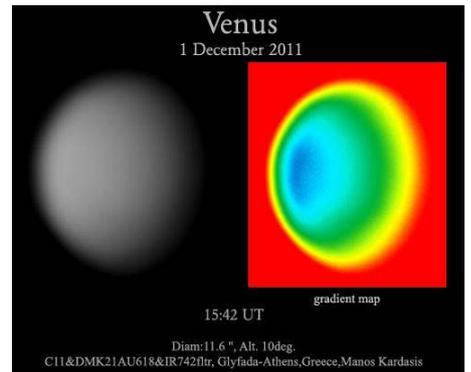


Figure 3. Image of Venus by M. Kardasis, 2011 Dec 1d 15:42UT, 279mm SCT; other details as shown.

lars and/or shading persisted through October, and they continued to be better seen in blue light.

On Nov 9 Adamoli found the S. polar collar certainly present together with a diagonal, near-equatorial shading. Both polar areas were dusky. On Nov 15 & 18 a bright p. limb was evident; the poles appeared as they did on Nov 9, but no equatorial markings were apparent. The apparent phase varied from 100% to 94% during this period. McEwen (1938) and Adamoli (2011) used very similar apertures and magnifications. The Director also saw the planet visually on Dec 3 & 9, confirming the shaded terminator.

A few images have also been submitted but the low altitude of the planet at present (at declination -24° in early December) makes conditions awkward for many observers. Manos Kardasis (Greece) sent two good images for Dec 1 & 4 with an infrared 742nm filter. The disk is often blank at this wavelength: see Figure 3.

The next report

The next report will cover the period 2011 December–2012 January. All records should reach the Director by early February in time for him to be able to prepare a summary for the April issue of the *Journal*.

Richard McKim, Director



Solar Section

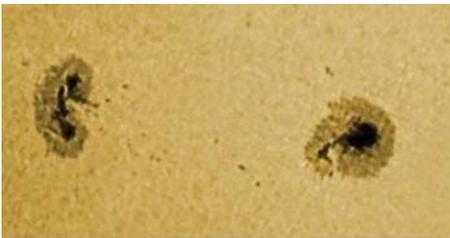
2011 October

Activity continued to increase during October largely due to an upturn in sunspot numbers in the southern hemisphere. Multiple sunspot groups were recorded on all days of the month.

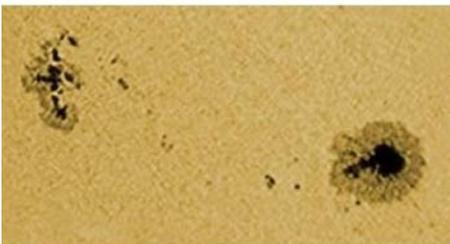
AR1302 N13°/283° remained on the disk from September and was now located in the NW quadrant and was still visible to the protected naked eye. On Oct 2 the group continued its decay, now type Dac with an area of 410 millionths. The following day the group had shed its small following penumbral sunspots as it approached the western limb and it was not seen on Oct 6.

AR1305 N12°/249° also survived from September comprising of an irregularly shaped leading penumbral sunspot and a few small following spots, type Dko. By Oct 3 the leading sunspot had reduced in size and became much more circular. The group was approaching the western limb on Oct 6 and was still visible the following day crossing the limb (1130 UT).

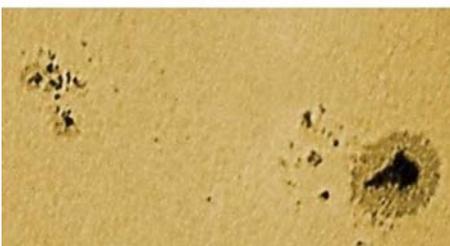
AR1309 N23°/156° rounded the eastern limb on Oct 2 type Dso. The group survived a full transit of the disk rounding the western limb on Oct 14. The group reduced to type Cso on Oct 6 and became a single Hsx spot on Oct 9 remaining unchanged thereafter.



Oct. 25

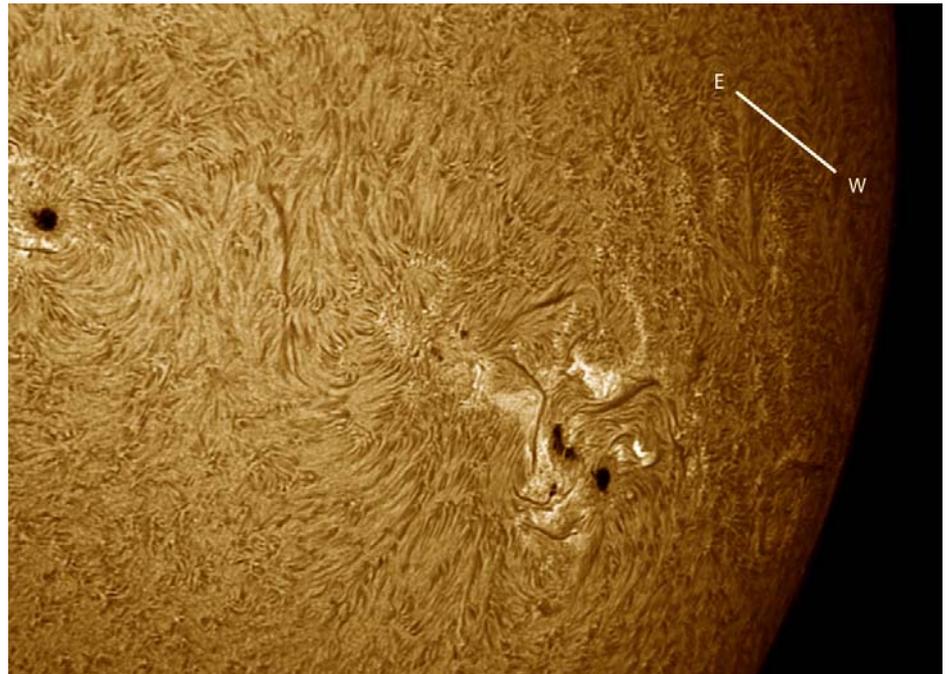


Oct. 27



Oct. 28

Changes in AR1330 in white light from October 25 to 28. *Peter Paice.*



Active regions 1302 and part of 1305 in H-alpha, 2011 Oct 2, 11:20 UT. *Martin Crow.*

AR1312 N22°/122° was another group that crossed the solar disk largely unchanged. The group rounded the eastern limb on Oct 4 type Hsx and underwent brief growth on Oct 7 & 12 as it crossed the CM, before resuming its former state. The group rounded the western limb on Oct 17.

AR1314 N27°/058° was first reported on Oct 8 as a single Hsx sunspot on the NE limb. By Oct 10 it had grown to type Cki and by Oct 12 was type Hkx with an area of 310 millionths. Two following pores were seen on Oct 14 and the next day the main penumbral sunspot had become more asymmetric before becoming a more symmetrical single sunspot when near the CM on Oct 16. Its appearance changed little as it progressed towards the western limb although its size had reduced to 230 millionths on Oct 19 and was close to the limb on Oct 22.

AR1319 N11°/050° appeared on the disk on Oct 12 in the NE quadrant south of AR1314. The group was type Hsx with an area of 90 millionths but by Oct 14 several other small penumbral spots had appeared to make the group type Esc. Yet more sunspots had developed by Oct 15 to give a total area of 200 millionths. Further development took place the following day when a larger irregularly shaped penumbral sunspot appeared within the group. By Oct 19 most of the smaller sunspots had disappeared although the leader increased in size on Oct 20 to make the group Ekc with an area of 330 millionths. Only a single Hsx sunspot was visible on Oct 22 when the group reached the western limb.

AR1324 N13°/305° rounded the eastern limb on Oct 17. The group was fully on the disk by Oct 19 type Eac sporting many small penumbral spots. The main penumbral sunspot was

near the middle of the group on Oct 22 and was irregular in shape with a total area of 380 millionths. This spot had decayed by Oct 24 but the group had increased in length to become type Fai when 20 separate sunspots were counted. The number of penumbral sunspots reduced further by Oct 23 when the total area was just 90 millionths. Only a single Hsx sunspot remained on Oct 29 when the group was near the western limb.

AR1330 N07°/250° was the largest group of the month and appeared on the NE limb on Oct 22 type Hax. By the next day two other following penumbral sunspots had rotated onto the disk to form an Ekc group. The group was of similar appearance on Oct 24 and by Oct 26, the followers had formed a north to south line of three penumbral spots. On Oct 28 a new group AR1330 type Dsi had formed just to the north of the rear sunspots of AR1330 which was now type Fhi with a large penumbral leader and 10 following sunspots. The group crossed the CM on Oct 28 and by the next day AR1330 was type Fkc with an area of 490 millionths. Reports were received of the group being visible to the protected naked eye on Oct 28 & 29.

7 observers reported a Quality number of Q=18.54

H-alpha

Prominences

16 observers reported a prominence MDF of 4.49 for October.

A large prominence was observed on the SE limb on Oct 2, ejecting off the limb and reaching an approximate height of 140,000km. On Oct 3 an 'X' shaped prominence was visible on the SE limb together with some ejecta.



Notes and News

Another large prominence was seen on Oct 6 on the NE limb reaching an approximate height of 121,000km.

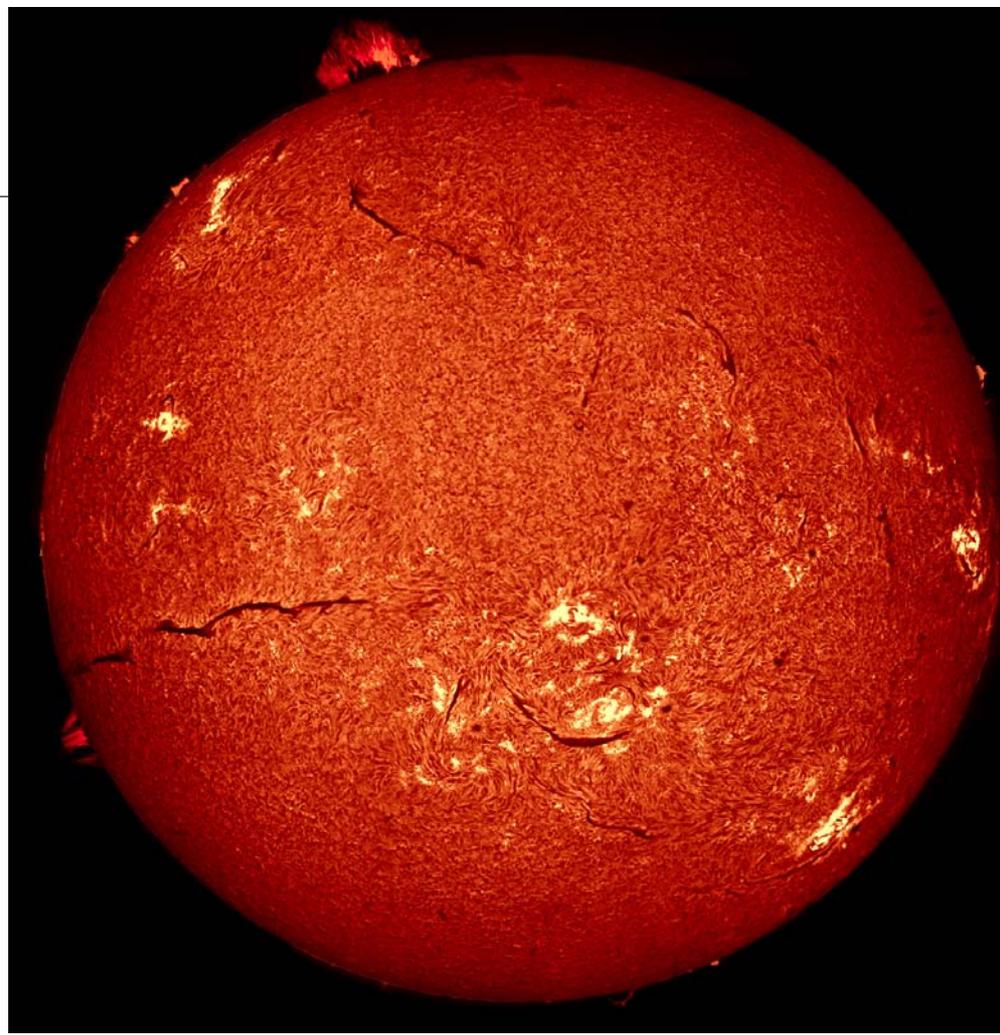
A splash type prominence was observed on the NW limb at the same location as AR1305 on Oct 7. On Oct 8 a prominence on the NW limb reached a height of 112,000km and by Oct 11 had grown to 121,000km. The eastern limb also sported three prominent prominence hearths on Oct 11.

A very prominent spire shaped prominence was observed on Oct 10 on the NW limb.

A fan shaped prominence on Oct 15 changed shape to a 'finger' by the next day on the NW limb. Also a small arc prominence on Oct 15 on the SW limb, increased in size and became a hedgerow by the following day.

Several arch prominences were seen down the SW limb on Oct 21.

Oct 22 was a particularly interesting day as it included two of the most dynamic prominences seen during this cycle so far. At 11:00 UT an extended prominence was seen above the equator on the W limb. It comprised several pieces of hydrogen in the form of a hook, none which were attached to the limb, its total height being about 160,000km. Just 10 minutes later, the upper parts had disappeared and the whole prominence was no longer visible by 12:05 UT. A flare was also in progress nearby. At 12:05 UT a prominence was also developing above the flare region. Initially a



Full disk image in H-alpha, 2011 November 13. (South at the top). Dave Tyler.

BAA sunspot data, 2011 October–November

Day	October		November	
	g	R	g	R
1	6	95	7	96
2	6	96	7	96
3	6	84	6	100
4	7	100	5	87
5	6	77	5	85
6	6	75	7	118
7	5	67	8	137
8	5	64	8	147
9	5	65	9	145
10	5	72	8	134
11	7	88	8	132
12	8	110	9	130
13	8	119	9	126
14	8	118	10	139
15	8	120	9	123
16	7	121	8	101
17	8	131	8	99
18	8	122	7	102
19	7	112	7	98
20	9	142	8	118
21	9	148	8	118
22	8	136	7	108
23	6	104	8	109
24	7	119	8	112
25	6	95	9	120
26	6	90	8	112
27	5	84	7	99
28	5	83	8	87
29	5	80	8	125
30	4	71	8	116
31	5	74		

MDFg	6.48 (52)	7.69 (48)
Mean R	98.79 (47)	113.94 (43)

series of hydrogen bands almost parallel to the limb were seen. These then moved further away from the limb such that by 12:35 UT an arch had formed as well as a small band almost perpendicular to the limb. Just 15 minutes later, the arch had broken up to reveal several bands of hydrogen almost perpendicular to the limb. These bands continued to rapidly change in appearance but had reduced in height and brightness by the end of the observing session. Another observer reported an erupting prominence with a distinctive arching finger at 12:50 UT.

Oct 26 brought a loop type prominence to the SW limb reaching a height of 158,000km.

A faint streamer was seen on the NW limb on Oct 28 west of AR1324.

Filaments & plage

10 observers reported a filament MDF of 4.54 for October.

Two small arc filaments were north and south of AR1302 on Oct 1 and a small but very distinct arc was seen at N05°/200° on Oct 3. Plage was seen around the rear element of AR1309 and between the leader and follower spots of AR1313 on Oct 7.

North & south MDF of active areas g

	MDFNg	MDFSg
October	4.45 (39)	2.21 (39)
November	5.09 (38)	2.70 (38)

g = active areas (AAs)
MDF = mean daily frequency
R = relative sunspot number
The no. of observers is given in brackets.

Two long dark filaments were seen north and south of AR1314 and bright plage was observed around AR1316 at S12°/048° on Oct 11. Plage was also seen in AR1313 at S15°/117°.

Two filaments were seen in association with AR1314 on Oct 15 with a large filament to the NW closer to AR1314. A small filament east of AR1319 on Oct 15 was much larger on Oct 16 arcing northward with gaps along its length.

Dark filaments were seen in association with AR1319 and AR1324 on Oct 19.

On Oct 20 an 'S' shaped filament was seen through sunspot group AR1324.

A long filament was north of AR1324 on Oct 24 and another long filament was north of AR1330. Plage was seen around AR's 1324, 1325, 1330 and 1331. Also a filarom was seen on the SE limb extending into the SE quadrant.

A very long horizontal filament shaped like a shepherd's crook, was seen near the centre of the disk on Oct 24.

A filament preceded AR1324 on Oct 26 and the group was riddled with stringy H-alpha plage. Two filaments were seen in association with AR1330 which also sported H-alpha plage between the leader and following spots.

On Oct 28 a filament was north of AR1324 and two filaments were seen in association with AR1330.

2011 November

Solar activity continued to rise during November with the Relative Sunspot number averaging over 100 for the first time this cycle. Activity in both hemispheres continued to increase with the northern hemisphere remaining dominant. Mul-



multiple sunspot groups were recorded on all days during November with 34 active areas being recorded in total.

AR1337 N17°/136° appeared close to the eastern limb on Nov 1 type Cki. The group developed to type Dso on Nov 3 but thereafter declined. The group faded on the disk after crossing the CM on Nov 5.

AR1338 S12°/118° also appeared close to the eastern limb on Nov 1, type Cki. The group grew to type Ehi by Nov 3 before reducing again to type Dao. The group traversed the solar disk mainly unchanged before rounding the western limb on Nov 13.

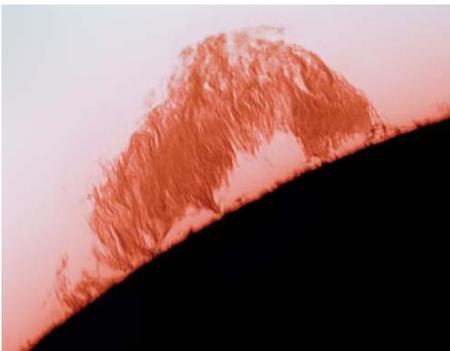
AR1339 N20°/104° was first reported on Nov 3 as a large sunspot group, type Eki. By the following day the group was more complex and had enlarged to type Fkc with an irregularly shaped main sunspot with several smaller penumbral sunspots to the north and east. The group had a total area of 1600 millionths. On Nov 6 the group was easily visible to the protected naked eye and consisted of three main components. The group crossed the CM on Nov 8 and by the next day, the components had reduced to two but the group was still described as 'imposing'. The group started to reduce on Nov 11 and was type Dac by the following day and nearing the western limb on Nov 13. It was not seen on Nov 15.

Due to a lack of detailed members' reports from mid-month (due to poor weather in the UK in the period) it is not possible to comment fully on the progress of individual sunspot groups. Solar activity is therefore described as follows:

A new single Hsx sunspot (**AR1340** S09°/073°) appeared on the SE limb on Nov 4 being joined by two more northern groups on Nov 5 (**AR1341** N08°/056° and **AR1342** N18°/060°). The following day **AR1343** N29°/046° type Hsx appeared close to the NE limb.

By Nov 8 seven sunspot groups were observed on the solar disk the newest being **AR1344** S19°/100°.

On Nov 13 nine groups were observed, eleven groups on Nov 14, nine on Nov 15, eight on Nov 16 and nine on Nov 17. The groups observed were all fairly small and mostly in the northern hemisphere. On Nov 16 the two newest groups were **AR1350** N26°/311 just over the NE limb type Dso consisting of two small penumbral



Prominence on 2011 November 12. Alan Friedman.

sunspots and **AR1352** S23°/308° type Hsx, a small penumbral sunspot close to the SE limb.

The number of groups had reduced to seven by Nov 19 but on Nov 25 the number had again increased to ten. Now there was a string of groups in the northern hemisphere, evenly spread from the eastern to the western limb. On Nov 26 six sunspot groups were observed: **AR1352** S24°/285 a single Axx spot; **AR1353** N07°/266° another single Axx sunspot; **AR1355** N14°/253° type Hsx; **AR1356** N14°/229° type Hsx; **AR1358** N19°/195° type Dko and **AR1360** N17°/215° type Eao.

On the last day of the month, a similar picture was revealed the largest group being **AR1362** N07°/131° in the NE quadrant, type Dai with a total area of 150 millionths.

6 observers reported a Quality number of Q = 21.10

H-alpha

Prominences

14 observers reported a prominence MDF of 5.31 for November.

On the NW limb on Nov 4, a very large prominence was observed which reached an estimated height of 205,000km.

A hedgerow prominence stretched across the NE limb for approximately 232,000km on Nov 8 which by Nov 10 had rotated onto the disk as a large filament (see below). Post-flare loops were observed on the SW limb reaching a height of about 112,000km and another prominence reached an approximate height of 102,000km on the SE limb. There was also a further prominence on the NE limb which rose to about 140,000km.

Reports were received of a fine diffuse arch prominence on the SE limb on Nov 13. The next day, a large detached prominence was reported on the NE limb estimated to be about 10° in length. Also the prominence reported on the SE limb on Nov 10 was now at a height of approximately 214,000km.

Two low arch prominences were noted on the NE limb on Nov 15 and also a large prominence mass was seen between N10° and S10° along the eastern limb on Nov 15 & 16.

Two large diffuse prominences were seen on the E and ESE limbs on Nov 17. A pair of arch prominences graced the SW limb on Nov 25.

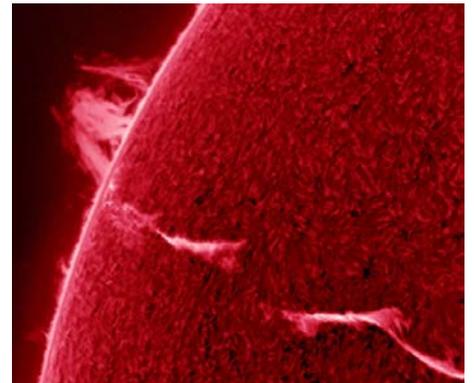
On Nov 30 reports were received of an imposing hedgerow prominence hearth stretching around the eastern limb from N10° to S10°. This hearth comprised several elements, the largest appeared as two linked 'trees' to the north with a low arch at the southern end.

Filaments & plage

10 observers reported a filament MDF of 4.85 for November.

A large curved filament was seen in the NE quadrant on Nov 7 and by the next day, a total of six filaments were seen mostly in the NE and SE quadrants.

On Nov 10, a large prominence seen on the NE limb on Nov 8 had rotated onto the disk as a large filament. This became quite a feature on the disk and continued to extend over the NE



Giant filament on the disk on 2011 Nov 13, 11:14UT in H-alpha. Dave Tyler.

quadrant during the following days, covering approximately one-third of the solar disk (see images). On Nov 13 the filament was seen extending across the NE limb as a series of loops with a filarom on the limb. The next day the filament's length was estimated at 335,000km and by Nov 16 it was aligned east-west extending from the CM back across the NE quadrant. The filament was last reported on Nov 20 approaching the NW limb.

Plage was seen around **AR1344** on Nov 13 near the SW limb.

On Nov 19 an extensive filament was reported in the SW quadrant as well as a quite long curved filament on the NE limb. Both were still present the following day along with an arch filament near the northern pole. A region of plage was also seen around **AR1360** and near to the eastern limb.

Plage was still visible around **AR1360** on Nov 25 and around **AR1358** which was closer to the eastern limb. Many filaments were seen in the NW quadrant on Nov 27 including a striking curved filament near to the CM.

Lyn Smith, Director

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A special event at the Rutherford Appleton Laboratory

Communicating astronomy

Nearly 100 amateur and professional astronomers gathered at the Rutherford Appleton Laboratory near Didcot, Oxfordshire, on Saturday 2011 October 22 for a special meeting on Communicating Astronomy, organised by Newbury Astronomical Society. Over 20 astronomical societies from as far north as Yorkshire were represented together with national organisations active in popularising and promoting astronomy such as the BAA, the Campaign for Dark Skies, Dark Sky Discovery, Intech and BBC Stargazing Live.

The morning session was kicked off by Dr

Robert Simpson from the Zooniverse project who showed how, by using just a small fraction of the estimated 200 billion hours that are spent watching TV each year, ordinary people are helping scientists analyse data on a wide range of subjects from galaxies and lunar craters to weather records and planets round other stars. Dr Sarah Roberts from the Faulkes Telescope Project then described how amateur astronomers can help schools take part in scientific observing projects using robotic telescopes situated in Australia & Hawaii.

Dr Chris Davis from the RAL ended the session by explaining how Citizen Science is help-

ing to protect society by watching out for huge explosions of material from the Sun that can knock out satellites and power networks.

Alongside the programme of talks, several organisations set up displays in the RAL exhibition hall close to the lecture theatre. During the lunch break this was the focus for much discussion and exchange of ideas.

After lunch Jo Lewis, South-East regional co-ordinator for the Dark Sky Discovery project which was due to be launched nationally on the following Monday, spoke about how the group will work with astronomical and community organisations to identify safe accessible places in local areas where people can go to enjoy the night sky. Dr Jenny Shipway of Intech Planetarium and Science Centre near Winchester described how she uses 'the best prop in the world' to communicate the excitement and wonder of astronomy to her audiences, and Emily Baldwin, deputy editor of Astronomy Now magazine, explained why traditional paper news media are still thriving in the digital age.

The afternoon was rounded off by Professor Mike Edmunds of Cardiff University, whose talk *Middlemarch, Einstein and the Barmaid* took us on a whirlwind tour of astronomy communication over the last 2,300 years. Being able to explain your new theory to a barmaid was considered the ultimate challenge for any scientist!

Closing the meeting, Newbury AS chairman Chris Hooker said 'This Society has been promoting interest in astronomy for the past thirty years. To celebrate this anniversary we decided to bring together a group of people who are active in outreach, add a programme of talks on the theme of communicating astronomy and stir gently. We have had an excellent day and everyone has thoroughly enjoyed themselves.'

We are very grateful to our hosts at the RAL, all the speakers, the societies and organisations which brought displays and everyone who participated for making the day so successful.

(Report by members of Newbury Astronomical Society.)



Speakers and attendees at the Communicating Astronomy meeting at the RAL on 2011 October 22. Clockwise from top left: Chris Hooker, Dr Sarah Roberts, Dr Chris Davis, Prof Mike Edmunds, Jo Lewis, Dr Jenny Shipway, Emily Baldwin, Dr Robert Simpson, Toki Allison (BBC). Photo-montage by Nicky Fleet.