

Bristol Astronomical Society

Minimum Standards for Organised Solar Observing Events.

Version 1.0

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Document Purpose and Usage

This document is a guide, setting out the minimum safety standards to be followed for Members of the Bristol Astronomical Society (BAS) at BAS organised solar observing sessions.

For avoidance of doubt this standard is mandatory for any solar observing event that is to be covered by the Society's public liability insurance.

Contact information for BAS can be found at www.bristolastro.org.uk

This document is available to all Society members.

A separate document giving supporting information and evidence of instrument safety is available.

Standards

Session Organisation

- BAS Solar observing sessions must be organised and run by a member with sufficient experience and knowledge to recognise when this standard is not being met and with the judgement and common sense to take appropriate action. This person will not be responsible for the actions for others but to bring to their attention any non compliance and advise corrective action. Failure of a member

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to comply with an event organisers request will be treated as a safety incident by the committee.

- Members are responsible for compliance and safety of their personal equipment.
- Members must ensure correct and safe use of society equipment.
- The session organiser should carry out a risk assessment for the session and a copy be sent a to the BAS safety Officer. It should record actions planned to reduce risk and should be made available to all members assisting with the event. A safe practice check list should be used for repeated events such as Tyntesfield solar observing sessions, but it must be reviewed annually or if a safety incident occurs.
- BAS must not take on responsibility for control of large crowds, provision of first aid, or responsibility for minors.
- All Safety incidents must be reported using the BAS safety incident procedure.
- Solar observing must stop at any time that circumstances e.g. rowdy behaviour by visitors, indicate that it is unsafe to continue.

Site layout

- The observing site should not contain a through route. People should only enter the observing area to take part in the activity, not pass through to get somewhere else.
- Vehicles, Cycles, horses etc. must be dissuaded from entering the observing area.
- Equipment should be placed with sufficient spacing between telescopes so as to allow safe queuing.
- Observing equipment that is not safe for solar observing must not be left where it can be picked up and used by a member of the public.
- Society members on a stand should set a good example and not look directly at the sun.

Signs and Notices

The following signs should be displayed on the observing site

Solar Warning Sign

A solar warning notice will be displayed to alert the public entering the display area about the potential dangers of solar observing.

BAS name sign

A Bristol Astronomical Society Sign will be displayed prominently.

Other explanatory and warning notices will be displayed as appropriate.

Solar Observing Equipment General

- Only equipment described as acceptable in this standard can be used for solar observing at a BAS event.
- Each item of equipment should have -
 - A cover eg a bin liner, to be used if it is left unattended. This must cover most of the equipment, be obvious and have a method of attachment so it wont blow away in the wind.

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- A notice to be used when the equipment is covered stating that it is not in use. This notice may be fixed to the cover.
- Young children or short people requiring more than a single box step to see through the eyepiece may have to accept that they cannot use the telescopes, however, if a step ladder is provided it must not be higher than a 4 step ladder and should have a handrail that the observer can use to steady themselves while observing. The step ladder must be folded when not in use.
- Telescopes using “along the axis” viewing systems are not to be used.

Projection of the solar image on a matt reflective screen.

Solarscope

Commercial Solarscopes suitably modified to be safe and restrict access, equivalent to those described on <http://www.solarscope.com/> are acceptable. They must be sited on a table or other suitable surface.

Projection attachments for telescopes

- Home made projection attachments must be of a solid construction.
- The light path must be enclosed so a child cannot look up the beam towards the eyepiece.
- A child's head must not be able to go through any aperture in the enclosure.
- The screen must be joined to the enclosure so that the suns image can not project off the edge of the projection screen.
- The assembly must be positively attached to the telescope so that it cannot be simply pulled off and sufficiently rigid so that it cannot be bent out of the way.

Neutral Density Filter covering the Objective Aperture.

Commercial Filters

Full Aperture Filters supplied by recognised astronomical suppliers designed for solar observation using a specific telescope are acceptable when used to the manufacturers instructions.

Acceptable material for solar filter construction.

- Baader Planetarium Astrosolar Film Optical Density 5.
http://www.baader-planetarium.com/sofifolie/sofi_start_e.htm
- Thousand Oaks RG Solar Film and Black Polymer Film
<http://www.thousandoaksoptical.com/solar.html>

Binoculars

Filtered Binoculars are not to be used at BAS solar observing events.

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Filter Construction

- Maximum Filter Age is 10 years
- The filter housing must be strong enough to resist reasonable force e.g. Being brushed against or wind but It is not expected to withstand deliberate attempts to break it.
- The filter must be positively attached to the telescope, and should withstand reasonable force to pull it off. A slide on fixture held on by friction is not acceptable.
- Adhesive tape is acceptable if the tape adheres all round the join, a few single pieces across the join are not acceptable, and there are sufficient turns to ensure the tape holds itself in place and adheres to the scope and filter. Fresh tape must be used whenever the filter is re-attached.
- The filter should have a "dew tube" type extension to deter people touching or prodding the filter material.
- A separate dew tube does not need to meet the stringent fixing requirement of the filter. It is acceptable for temporary tubes to be made up from suitably coloured cardboard held on with adhesive tape or elastic.
- The filter or dew tube must be a different colour to the telescope tube, preferably day-glow and labelled as a solar filter. It is acceptable for the colour and label to be provided on a separate "dew Filter" used with the filter.
- The filter must have a container to protect it in transit.

Pre-session checks

Inspect the filter and do not use it if the filter surface shows signs of scuff marks or pinholes. If the filter shows no obvious signs of damage, the pinhole check should be made by looking through it at the sun and moving the sun's image over the whole of the filter. Reject the filter if any pinholes are visible by this method.

Reject or repair a filter that's housing is showing signs of coming apart.

Hydrogen Alpha Telescope

Only unmodified commercial Hydrogen alpha telescopes or filters that are used and maintained to manufacturers instructions are acceptable.

Pre-session checks

Ensure there is no visible damage to the instrument.

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Change Control

Changes to this document must be approved by the BAS Committee

Date	Version	Date Accepted	Notes
2013/04/01	0.1		Initial Version for comment
2013/04/17	0.2 Working Draft	2013/04/17	Incorporating the changes agreed at the Bristol Astronomical Society Committee meeting of 16 th April 2013
2013/06/17	1.0	2013/05/29	Changes agreed at the Bristol Astronomical Society Committee meeting of 2013/05/29