

## Richmond Astronomical Society Outreach Users Guide

**Introduction.** As part of its educational mission, the Richmond Astronomical Society (RAS) offers the services of its members as volunteers when requested to local schools and other non-profit organizations free of charge. This can take several forms including staff and telescopes for celestial viewing session (a.k.a. star parties or sky watches); lectures on astronomical topics; facilitated educational sessions with astronomy themes; and even a static display about the RAS. What follows is a guide to using these services for teachers and other group leaders. It is understood that practical considerations such as time or location constraints may not allow all of the guidelines to be followed, but, to the extent that these guidelines can be followed, an outreach event will be more enjoyable for everyone.

**Skywatches.** For many years members of the RAS have volunteered to bring their telescopes and operated them for school groups wanting to give their students 'up close and personal' views of the wonders of the universe. While most skywatches are evening events, some RAS members also have the required equipment to safely view the Sun during the daytime. If your school or other non-profit group would like to schedule such a skywatch at your location, please read and follow the following guidelines.

Since the RAS skywatch volunteers usually have jobs and other demands on their time, it's important to schedule a sky watch as far ahead as possible so that the volunteers can fit it into their calendars. At a minimum you should pick a date at least one month away. Two or more months would be better. Before you set the date and advertise it contact the RAS coordinator (John Raymond at raymond7419@verizon.net) to make sure volunteers are available for the date. The best time of the month is generally within 3 days or so of the first quarter moon, although practical considerations can dictate when a skywatch must be held. You can find the dates of the moon phases online (<http://aa.usno.navy.mil/data/docs/MoonPhase.php>) or on a good calendar or almanac. The worst time, as far as the availability of RAS members, is a weekend nearest a new moon.

Once you've set a date for your skywatch, determine the best location for the event at your school, camp, or other venue. The ideal location is a relatively flat space with a view of the sky that's unobstructed by trees or buildings. An uncluttered western horizon can be particularly important since the planets Venus and Mercury are often seen low in the sky in that direction. The best skywatch spots are those with little or no glare from nearby streetlights, advertising signs, or other security lighting. If a viewing spot is ideal except for the glare of lights, see if you can get permission and access to switch off some or all of these lights during the skywatch. If switching the lights off causes a safety concern, consider the temporary use of solar charged LED walkway lights that illuminate only the pathway to the telescopes. Also, the location should ideally be accessible to the cars or light trucks used by the RAS volunteers to transport their telescopes. Often these telescopes are too heavy to haul over long distances and may require electrical power from the car's battery. Finally determine where the nearest public rest rooms are and arrange to have them available during the skywatch.

Several tips will help prepare the members of your group to get the most from the skywatch. Before the skywatch gather them indoors and review the following guidelines:

- 1.) For the safety of the people and the telescopes, no running or roughhousing is allowed in the area around the telescopes.
- 2.) If you bring a flashlight try to cover the light with dark red plastic to filter the light so that it won't harm your night vision. A suitable, inexpensive transparent red plastic called rubylith can be found in art supply stores. In a pinch the material from a brown paper bag can be used for an effective flashlight filter.
- 3.) Never shine a flashlight into anyone's face during the skywatch. This will spoil their night vision and hamper what they can see through the telescope.
- 4.) Form orderly lines to look through the telescope and be patient. Sometimes clouds will temporarily hide celestial objects from the telescope and you may have to wait for the clouds to

- clear. Also the telescope operator may have to reposition the telescope to track on an object or relocate it if someone has bumped the telescope.
- 5.) Unless invited to do so by the telescope operator, please don't touch the telescope. Telescopes are often delicately balanced and aimed. So, even the slightest touch or bump will move the telescope off the object you want to look at.
  - 6.) Listen to and carefully follow any instructions given by the telescope operator. In particular he or she will show you where to look in the telescope. Feel free to ask the telescope operator any questions you may have about the object being viewed or about astronomy in general.
  - 7.) When looking through the telescope open your eye as wide as you can and slowly move it as close to the telescope eyepiece as you comfortable can. If you can not see the object the telescope is aimed at, don't be shy in telling the telescope operator. Often the object will drift out of view or someone ahead of you may have inadvertently bumped the telescope. If so, the telescope operator will be happy to re-aim the telescope for you.
  - 8.) If there is more than one telescope at the skywatch, have a look through them all. Often they may be pointed at different objects. Even if they are pointed at the same object they may offer views of different magnification and resolution. Also, as the evening goes, some objects will set in the west and new ones will rise in the east allowing the same telescope to show you different objects later that same night.

**Astronomical Lectures.** Several RAS members have prepared and presented talks for general audiences on a variety of astronomy and space related topics. If you'd like an RAS volunteer to come and speak to your class or non-profit group, please contact the RAS president ([president@richastro.org](mailto:president@richastro.org)) at least one month, preferably two or more months, ahead of time so that the request can be communicated to the membership in search of a suitable talk and an available volunteer.

**Facilitated educational sessions with astronomy themes.** The RAS is a member of the Night Sky Network (<http://nightsky.jpl.nasa.gov/>). As such, certain members have activity kits designed to give an indoor, 'hands-on' experience to students with a focus on certain astronomy topics. To arrange for one of these sessions, contact Betty Wilson ([blpwilson@aol.com](mailto:blpwilson@aol.com)) at least 2 months in advance.

**RAS Display.** The RAS has a three panel static display suitable for indoor display that illustrates activities of the club. Included is an LCD panel slide show of member images. To arrange for temporary use of this display by your school or organization, contact the RAS president ([president@richastro.org](mailto:president@richastro.org)).