

## Throw a Star Party!

### Tips for Offering a Nighttime Viewing Session with Telescopes

1. **Pick a date at which one or more bright objects will be high in the evening sky.** Select a time when planets will be visible in the early evening sky using sources such as [StarDate](#), the [Planet Finder](#) applet, or other planetarium program. Try to avoid dates when the Moon is full or nearly full (see below), as its light will wash out other nighttime objects. The Moon itself is best viewed when it is a crescent or in first quarter. A brief tour of the month's constellations, deep-sky objects, planets, and events is available through [Tonight's Sky](#). (Note: Venus and Jupiter are almost always bright when visible, Mars is often bright, and Saturn and Mercury are always a bit faint. Uranus and Neptune are too faint to see without telescopes or binoculars.)
2. **Identify a start and end time for your program on your intended date.** Best viewing times will begin about an hour after sunset. Find sunset times and Moon phases for your area through <http://www.sunrisesunset.com/> or similar sources.
3. **Optional: Contact your local astronomy club or other amateur astronomers.** To contact your local astronomy club, type in your zip code at [Astronomical League](#) or search at [Sky and Telescope](#). Let them know which planets or other objects you would most like for the children to see.
4. **Provide a viewing area, preferably away from bright lights and traffic.** Try to avoid nearby obstructions, such as trees or buildings, which will block certain sections of the sky. Will the objects you intend to view be visible from that location in early evening?
5. **Plan for access to restrooms, and if possible, to drinks.** Have water available for amateur astronomers and visitors.
6. **Have a back-up plan in place before the announcement for inclement weather:** Will the event be cancelled, postponed, or moved inside with different activities? If the event is cancelled or postponed, at what time or point will the decision be made to do so, and how will the audience hear about it?
7. **If appropriate, plan to have the viewing area sprayed for mosquitoes or treated for fire ants in advance of the observing session.**
8. **If possible, ask for nearby bright overhead lights and sprinkler systems to be turned off during the period of the observing session.**

9. On the night of the observing session, arrange for telescopes to be set up before sunset, so that there is still sufficient light to arrange things.
10. Optional: Provide sky maps of the current night. Monthly [sky charts](#) or simple [sky wheels](#) are available free from a variety of websites, including the links offered here; note that the sky wheels require assembly but work year-round.
11. Review the information below in preparation for discussing the night sky with visitors.

**Facilitator's Notes:**

- Planets don't make their own light. They appear bright because they are reflecting sunlight.
- Mercury, Venus, Mars, Jupiter, and Saturn often can be seen with the naked eye on clear, dark nights.
- Uranus is barely visible in very dark locations to observers who know where to look.
- The existence of Neptune was deduced mathematically and then confirmed by telescopic observations. It can be viewed through binoculars from a very dark location.
- Through a telescope:
  - Venus often looks like the Moon—a crescent, quarter, or gibbous phase.
  - Jupiter has faint bands of different colors. Jupiter's four largest moons, Io, Europa, Ganymede, and Callisto, appear as bright dots on the sides of Jupiter, and disappear as they pass in front of or behind the planet.
  - Saturn's rings are easily seen.
  - Mars has a reddish appearance.
- Galileo first used his telescope to study the Moon 400 years ago. Telescope optics have improved over time, allowing scientists to make more detailed observations of objects in the night sky.
- Telescopes allowed astronomers to view the *surfaces* of planets; spacecraft instruments now allow us to infer information about the *interiors* of planets.
- Pluto is a tiny, distant dwarf planet and can be viewed through a telescope from a very dark location.