



PlanetQuest Observing Cards

Telling the story of the night sky and exoplanets

About the Activity

Use these cards at an observing night to give new stories to tell about commonly viewed celestial objects. Available in two versions: download and print or view on a mobile device with red light filter. Harness the excitement of the story of exoplanets and add intrigue to your star party.

Topics Covered

- Stories, examples, and illustrations about 11 types of commonly observed celestial objects
- Exoplanet connections to observing nights

Location and Timing

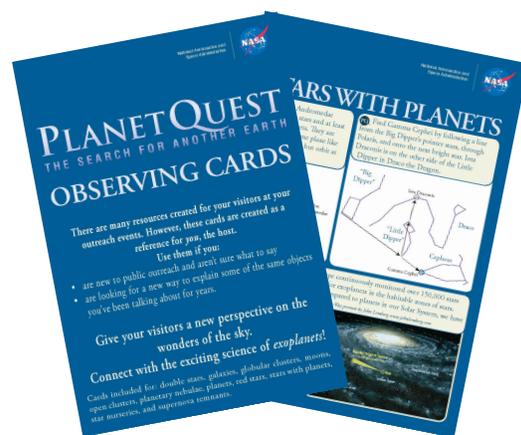
Use with telescopes at a star party. Can last as long as participants want to observe, usually an hour to find the objects.

Set Up

Share the cards with the telescope operators and club members. Mobile versions can also be downloaded with a red filter! See the Activity Description and Background Information for more details and suggestions.

Participants

Adults, teens, families with children 5 years and up
If a school/youth group, ages 9 and higher
No minimum or maximum number of participants



<u>Included in This Packet</u>	<u>Page</u>
Detailed Activity Description	2
Helpful Hints	3
Background Information	3

Cards can be downloaded separately:
<https://nightsky.jpl.nasa.gov>

Materials Needed

- Observing Cards from the Night Sky Network.
- Telescopes
- (Optional) binoculars
- (Optional) Celestial Treasure Hunt handout for visitors

PLANETQUEST

THE SEARCH FOR ANOTHER EARTH



Detailed Activity Description

Leader's Role	Participants' Roles (Anticipated)
<p>Preparation Notes:</p> <p><i>To Do:</i></p> <ol style="list-style-type: none"> 1. Each participating amateur astronomer may pick any object(s) he or she wishes to show and that his or her telescope is capable of viewing. 2. Prepare the astronomers by giving each person one or more of the Observing Cards to prepare for the evening. Mobile, red versions of the cards are available for download: https://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=529 3. (Optional) Print enough Treasure Hunt handouts for all visitors and have enough pens/pencils so visitors can keep track of what they observe throughout the evening. 	
<p><i>Note:</i></p> <p>If examples of one or more of the objects in the Observing Cards are not accessible (sky too bright, out of range of the telescopes, no examples far enough above the horizon), you can have someone explaining about the object (e.g. supernova remnant Crab Nebula) and indicating its position in the sky if it was dark enough to see it, or when you would be able to see it. Some cards also have example images of these objects that are visible under red light conditions.</p>	
<p><i>Set Up:</i></p> <p>Whether or not your club members have a telescope, they can still show off the wonders of the night sky. Some Observing Cards objects are visible with the eyes alone or binoculars and are a great way to engage visitors in line for the telescopes. Distribute the Observing Cards to sky guides before dark so they have a chance to review them and ask any questions.</p> <p>Each sky guide can point out an object and make the observation relevant to their visitors with stories and images.</p>	<p>Participants tour from one telescope to another to view different objects in the night sky.</p>

(Optional) If using the Treasure Hunt handout, introduce it to your audience:

To Say:

Did you know that the calcium in your bones and the oxygen you breathe were formed inside of a star? Here's a Treasure List to take on a treasure hunt through the telescopes to view objects in the sky that make stars like our Sun and planets like the Earth we're standing on. Record each object you see in the box.

Helpful Hints

Mobile, red versions of the cards are available for download:

https://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=529

Background Information

Supernova Remnant:

M1: Crab Nebula

NGC 6960 & NGC 6992: Veil Nebula

NOTE: There are no “Supernova Remnants” visible through amateur telescopes from about **mid-April to the end of June** in the early evening (before 11 p.m.). The Crab Nebula is no longer visible after mid-April and the Veil Nebula does not get high enough to be seen (and only under very dark skies) until the beginning of July.

Star Nurseries (star forming regions):

M8: Lagoon Nebula

M20: Trifid Nebula

NGC 7000: North American Nebula

M42: Orion Nebula

NOTE: There are no “Star Nurseries” visible through amateur telescopes from **May to the end of June** in the early evening (before 11 p.m.). The Orion Nebula is no longer visible after the end of April and the Lagoon (M8), the Trifid (M20), and the North American Nebula (NGC 7000) all start coming into view toward the end of June.

Star with Planets:

See the star maps in the Night Sky Network Activity: “Where are the Distant Worlds?”

Planet Orbiting our Sun:

Check your favorite astronomy reference or magazine for star maps with planets visible at the time you are observing.

“Exoplanet” may be a term your visitors have not heard before. Be sure to explain that these are planets around stars other than our Sun, and are not in our own Solar System. This is a common misconception.