



Overnight Programs Description & Correlations

Space Rocks

(Schools, BSA, Girl Scouts & youth-serving groups: Grades K-12)

- **Program Description**

Did you know that NASA has a handful of past, present, and future missions designed to visit space rocks? What can scientists learn by observing and studying space rocks? In this classic program, guests learn about the origins, composition, and classification of asteroids, meteors, and comets. Students collaborate as they perform a spectacular reaction to create their very own sublimating dry ice comets, complete with frozen gases, dust, and geysers, just like those in space! Elementary school students imagine and design a hypothetical asteroid mining machine. Middle and high school students apply their observational skills to collect and graph scientific data about their comets and explore hypothetical asteroid mining careers. Learn how and when to observe meteor showers and why meteors hold clues to the origins of the Universe and our Solar System. In the evening, students meet Chabot astronomers and learn about ongoing asteroid research in our historical observatories.

- **Next Generation Science Standards**

1-ESS1-1 & 2-ESS1 Earth's Place in the Universe, 2-PS1-1 Matter and Its Interactions, 4-ESS1 Earth's Place in the Universe, 4.Earth's Systems: Processes that Shape the Earth, 5.Space Systems: Stars and the Solar System, ESS1.C The History of Planet Earth, K-2-ETS1-1 Engineering Design

MS-EES1 Space Systems, MS-ESS1-3 & MS-ESS1-4 Earth's Place in the Universe, ESS1.B Earth and the Solar System

HS-ESS1-6 Earth's Place in the Universe, HS History of Earth

- **Cub Scouts Out of This World Nova Award**

1A&C, 2A(a&c)*, 2B(a), 3A(1,2,3)**, 4A&B, 5

*Upon advance request

**As viewing & weather conditions permit

- **BSA Astronomy Merit Badge**

1(abcd)*, 2*, 3a, 3b~, 3(cd)*, 4(abcd), 5(a&c)~, 5d**, 7c, 8a, 8(b&c)~, 9*

~Requirement partially covered

*Upon advance request

**As viewing & weather conditions permit

- **BSA Exploration Merit Badge**

5c*, 8*

*Upon advance request

Solar System Express

(Schools, BSA, Girl Scouts & youth-serving groups: Grades K-5)

- **Program Description**

Where are we in our vast, expansive Universe? Journey through our cosmic neighborhood with us! In this popular program, guests learn to identify the planets in our Solar System by their unique physical characteristics, and to distinguish between planets and stars, and between stars and galaxies. During our premier live show, students join the Planet Hunter on an exciting galactic quest for Earth-like exoplanets — the kind that may contain life — throughout our Universe. Elementary school students will create surprising models of our Solar System, comparing the sizes, distances from Earth, and orbits of the eight planets, dwarf planets, and other features. Middle school students will learn about the transit method, which scientists use to detect distant astronomical objects, and apply their understanding and creativity to imagine exoplanets beyond our Solar System. In the evening, students meet Chabot astronomers and view planets and stars in our night sky through telescopes in our historical observatories.

- **Next Generation Science Standards**

1-ESS1-1 Earth's Place in the Universe, 2-ESS1-1 Earth's Place in the Universe, 5-ESS1-1 Earth's Place in the Universe, 5.Space Systems: Stars and the Solar System

MS-ESS1 Space Systems, MS-ESS1-1 & MS-ESS1-2 & MS-ESS1-3 Earth's Place in the Universe, ESS1.B Earth and the Solar System

- **Cub Scouts Out of This World Nova Award**

1A&C, 2A(abc)*, 2B(a), 3A(1,2,3)**, 3B(1,2)*, 3F(1,2)*, 4A&B, 5

*Upon advance request

**As viewing & weather conditions permit

- **BSA Astronomy Merit Badge**

1(abcd)*, 2*, 3a, 3b~, 3(cd)*, 4(abcd), 5(a&c)~, 5d**, 7c, 8a, 8(b&c)~, 9*

~Requirement partially covered

*Upon advance request

**As viewing & weather conditions permit

- **BSA Space Exploration Merit Badge**

8*

*Upon advance request

- **Girl Scouts Badge(s)**
Space Science Explorer (Daisies):
2b*, 3a*
Space Science Adventurer (Brownies):
1b, 2b*, 2c, 5a, 5c*
Space Science Investigator (Juniors):
1a, 2b, 3c, 5a*, 5b
Space Science Researcher (Cadettes):
4(a&c)*
Night Owl (Cadettes):
1c, 3b, 4a*, 5c
Space Science Expert (Seniors):
1b*, 2c
Space Science Master (Ambassadors):
4b

*As viewing & weather conditions permit

Suiting for Space

(Schools & BSA: Grades 3-8)

- **Program Descriptions**
We're going back to the Moon — very soon! As NASA prepares to send its Artemis mission astronauts to the Moon in 2024, learn what it takes to suit up for space at this new overnight program. During live demonstrations, students will experience the thrilling chemical reactions necessary to launch rockets into space, to replenish breathable air, and to create maximum absorbency garments, or “astronaut diapers.” Students then simulate and overcome the challenges of a successful, crewed mission to Earth’s closest neighbor, the Moon, through hands-on activities. For their mission, students choose a space exploration career and investigate the knowledge and skills necessary to pursue a career at NASA. Students will explore rocketry, aerodynamics, space suit design, and the Moon’s unique geology and atmosphere. In the evening, students meet Chabot astronomers in our historical observatories, which provided critical tracking information for successful reentry of the Apollo 13 spacecraft in 1970.
- **Next Generation Science Standards**
K-LS1-1 From Molecules to Organisms: Structures and Processes, K-ESS2-2 Earth's Systems, K-2-ETS1-1 & K-2-ETS1-3 Engineering Design, 2-PS1-1 Matter and Its Interactions, 3-5-ETS1-1 Engineering Design, 4-ESS3-1 Earth and Human Activity, 4-PS3-2 Energy, 5-PS1-2 Matter and Its Interactions, ETS1.B: Designing Solutions to Engineering Problems, PS2.B: Types of Interactions, ESS3.A: Natural Resources

MS-LS1-3 & MS-LS1-8 From Molecules to Organisms: Structures and Processes, MS-PS2-1 Motion and Stability: Forces and Interactions, MS-PS3-3 Energy, ESS3.A: Natural Resources

- **Cub Scouts Out of This World Nova Award**

1A&C, 2A(a&c)*, 2B(a), 3A(1,2,3)**, 3D(1,2)*, 4A&B, 5

*Upon advance request

**As viewing & weather conditions permit

- **BSA Astronomy Merit Badge**

1(abcd)*, 2*, 3a, 3b~, 3(cd)*, 4(abcd), 5(a&c)~, 5d**, 7c, 8a, 8(b&c)~, 9*

~Requirement partially covered

*Upon advance request

**As viewing & weather conditions permit

- **BSA Space Exploration Merit Badge**

1(abcd), 4(a&b), 4(c&d)*, 5(a&c), 6(a&b)*, 7(abcd)*, 8*

*Upon advance request

- **Girl Scouts Badge(s)**

Space Science Explorer (Daisies):

2b*, 3a*

Space Science Adventurer (Brownies):

2b*, 2c, 5a, 5c*

Space Science Investigator (Juniors):

3c, 5a*

Space Science Researcher (Cadettes):

4(a&c)*

Night Owl (Cadettes):

1c, 3b, 4a*, 5c

Space Science Expert (Seniors):

1b*, 2c

Space Science Master (Ambassadors):

4b

*As viewing & weather conditions permit

Starlight

(Schools: Grades 6-12)

- **Program Description:**

Star light, star bright: Behind each shimmering speck in our night sky is a colossal mass of extremely hot, reactive gases that undergoes breathtaking transformations over millions or billions of years. In this overnight program, students will explore this stellar lifecycle, from nebulae to supernova to black holes and everything in between. In our interactive

workshop, students analyze data to plot stars on a gigantic floor-size model of the Hertzsprung-Russell diagram, used by astronomers to classify the observable stars in our Universe. Through colorful activities and demonstrations, students investigate the visible and invisible light of the electromagnetic spectrum. Students also learn about the Bortle scale, used to measure the quality of a night sky, and collaboratively design solutions that mitigate negative impacts of light pollution. In the evening, students meet Chabot astronomers in our historical observatories, where they can experience the wonder of observing nebulae, stars, galaxies, and more through our telescopes.

- **Next Generation Science Standards**

MS-PS4-2 & MS-PS4-3 Waves and their Applications in Technologies for Information Transfer

HS-ESS1-1 & HS-ESS1-2 & HS-ESS1-3 Earth's Place in the Universe, HS-PS4-3 & HS-PS4-5 Waves and their Applications in Technologies for Information Transfer, ESS1.A The Universe and Its Stars, PS4.B Electromagnetic Radiation

- **Girl Scouts Badge(s)**

Space Science Explorer (Daisies):

2b*, 3a*

Space Science Adventurer (Brownies):

2b*, 2c, 5a, 5c*

Space Science Investigator (Juniors):

3c, 5a*

Space Science Researcher (Cadettes):

1b&c, 2a&b, 3a* & 3c, 4(a&c)*, 5a&c

Night Owl (Cadettes):

1c, 3b, 4a*, 5c

Space Science Expert (Seniors):

1b*, 2a&c, 4b, 5b*

Space Science Master (Ambassadors):

3a, 4b

*As viewing & weather conditions permit

Girl Scouts: Daisies/Brownies

(Grades K-3)

- **Program Description**

Discover the Sun, Moon, planets, and stars as you earn your Space Science badge. Your evening will be filled with interactive explorations at Chabot Space & Science Center. Venture through our Solar System and beyond in the planetarium. Investigate the night sky using telescopes. Gain confidence in your astronomy skills and have a blast on this stellar overnight experience.

- **Girl Scouts Badge(s)**

Space Science Explorer (Daisies):

1b, 2a, 2b**, 3a**, 3b

Space Science Adventurer (Brownies):

1b&c, 2b**, 2c, 3c, 4abc, 5a&b, 5c**

Hiker* (Brownies):

1abc, 2c, 3c, 4a&b, 5a&c

*Program add-on: Inquire in advance

**As viewing & weather conditions permit

Girl Scouts: Juniors

(Grades 4-5)

- **Program Description**

Discover the Sun, Moon, planets, and stars as you earn your Space Science badge. Your evening will be filled with interactive explorations at Chabot Space & Science Center. Venture through our Solar System and beyond in the planetarium. Investigate the night sky using telescopes. Gain confidence in your astronomy skills and have a blast on this stellar overnight experience.

- **Girl Scout Badge(s)**

Space Science Investigator (Juniors):

1a&c, 2b, 3a&c, 4b&c, 5a*, 5b&c

*As viewing & weather conditions permit

Girl Scouts: Cadettes

(Grades 6-8)

- **Program Description**

Cadette Researchers spend an amazing night all about deciphering light from stars and other objects in the night sky. We will teach you to use real scientific tools and instruments to reveal some of the hidden regions of the electromagnetic spectrum such as infrared and ultraviolet light. We will demystify how different stars are classified as we work together to build a giant star classification diagram. You will visit the observatories and telescopes to collect observations and lastly, you contribute to citizen science research on light pollution.

- **Girl Scouts Badge(s)**

Space Science Researcher (Cadettes):

1b&c, 2a&b, 3a*, 3c, 4(a&c)*, 5a&c

Night Owl (Cadettes):

1c, 3b, 4a*, 5c

*As viewing & weather conditions permit

Girl Scouts: Best-Of Mixed Groups

(Grades K-8)

- **Program Description**

Discover the Sun, Moon, planets, and stars. Your evening will be filled with interactive explorations at Chabot Space & Science Center. Venture through our Solar System and beyond in the planetarium. Investigate the night sky using telescopes. Gain confidence in your astronomy skills and have a blast on this stellar overnight experience.

- **Girl Scouts Badge(s)**

Space Science Explorer (Daisies):

2b*, 3a*

Space Science Adventurer (Brownies):

2b*, 2c, 5a, 5c*

Space Science Investigator (Juniors):

3c, 5a*

Space Science Researcher (Cadettes):

4(a&c)*

Night Owl (Cadettes):

1c, 3b, 4a*, 5a&c

Space Science Expert (Seniors):

1b*, 2c

Space Science Master (Ambassadors):

4b

*As viewing & weather conditions permit