

# Lassen Volcanic Dark Sky Festival

## August 9 - 11, 2013



## Program Descriptions

### CheMin- Minerals on Mars

"Curiosity," an automobile-sized rover on Mars, has just completed its first year of observations on the red planet. A lively discussion by NASA's Dave Blake will offer details of what was found and what it all means.

### Constellation Tours and Stargazing

Lassen's DARK night sky is a treasure and the reason for our festival! Laser-guided tours of the constellations along with telescopes pointed at planets, star clusters, dying stars, and distant galaxies. Don't forget to look for shooting stars during the Perseid meteor shower!

### Discovering Life at Sulphur Works

NASA astrobiology scientists and Red Bluff High School interns will examine samples from Sulphur Works in seeking to answer: How does life begin and evolve? Is there life beyond Earth and, if so, how can we detect it? What is the future of life on Earth and in the universe?

### Exploring the Moon with Lunar Samples

The landing of Apollo astronauts on the Moon was a magnificent triumph. Lunar samples, collected during the Apollo missions and encased in protective lucite, will give visitors an up-close and personal experience with rocks and soils collected from our nearest celestial neighbor.

### Future Parks of Our Solar System

In this fun and well-illustrated presentation, you will take a guided tour of the top tourist sights of the solar system. Featuring the latest spectacular images and videos from robot space probes, you will get up-close and personal with some of the most spectacular places in our solar system.

### International Dark Sky Association Q&A

Have you just seen The City Dark? Would you like to save our remaining dark skies for future generations? Stop by and meet with the International Dark Sky Association to learn more about this disappearing resource and how you can help.

### Lassen, Earth, and Mars

In Lassen Volcanic National Park, volcanism interacts with water and sustains microorganisms. Evidence of interactions between volcanism and water has also been discovered on Mars. Scientists working at Lassen are learning how to search more effectively for clues of ancient life on Mars. Join NASA's Dave Des Marais for this fascinating discussion.

### Junior Ranger Astronomy

Junior Rangers will have the opportunity to explore the DARK side of Lassen Volcanic National Park. Junior Rangers will learn that "Half the Park is After Dark" through fun activities and take home some great lessons about the importance of preserving and protecting our DARK night skies for future generations.

### Junior Ranger Night Explorer

Jr. Rangers ages 5 to 12 can earn a Night Explorer patch by completing activities in the Night Explorer workbook. Get your book at KYVC or the Loomis Museum. Supplies are limited.

### Messier - Looking for Comets and Finding the Universe

Learn about how one man's search for comets has led us to a lifetime of knowledge about our universe. Extraordinary pictures and fascinating facts about comets will be shared!

### NASA Astrobiology Information Tent

Meet with NASA scientists and local Red Bluff High School astrobiology interns to find out more about astrobiology—the study of the origin, evolution, distribution, and future of life in the universe! Stop by and take home something from NASA.

### Our Magnetic Sun

Are you planning on checking out the solar scopes? Be sure to stop by for this fascinating look at our closest star. Learn all about the life cycles of these celestial giants and get ready to safely view our sun through a specially designed telescope.

### Our Moon: What do You See?

Humans have marveled at our closest neighbor in the night sky for centuries. Explore fascinating stories from around the world about our Moon, build a scale model of the Moon, and answer some trivia questions about Earth and the Moon.

### Solar Scope Viewing

Marvel at a magnified view of our closest star. Come and safely observe our sun through a solar scope and learn some surprising and interesting facts about the center of our solar system.

### Solar System Hike

Join a park ranger on this guided hike of our solar system on the Mill Creek Falls trail. Just how far apart are the planets of our solar system spaced out? Come on this hike to find out and learn more about our closest neighbors... not to mention taking a great hike on a beautiful trail. Space is limited for this moderate, 4-mile hike. Reserve your spot at the KYVC.

### The City Dark Film Screening

In this search for night on a planet that never sleeps, filmmaker Ian Cheney asks a simple question, do we need the stars? This critically acclaimed film features stunning astrophotography and a cast of eclectic scientists. The City Dark is the definitive story of light pollution and the disappearing stars.

### What Is a Meteor Shower?

With household ingredients and inspiration from above, learn about the meteors which 'shower' Lassen's night sky. Great families and kids!

### When Worlds Collide

Sixty-five million years ago, more than three-fourths of all plant and animal life on Earth disappeared suddenly. This event was triggered by a massive asteroid/comet impact and had a catastrophic effect on Earth's environment. The most famous group of animals to perish was the dinosaurs. Join NASA planetologist, Kevin Zahnle, for this fun and fascinating look at what happens when worlds collide.

# Half the Park is after Dark

From animals to plants and water to volcanoes, Lassen Volcanic National Park protects many different natural phenomena. One of the most spectacular is frequently overlooked—our incredible, dark, night sky. Lassen Volcanic is one of the best places to learn about and enjoy the splendor of the night sky. Far from the light pollution of civilization, Lassen is one of the last sanctuaries of natural darkness. Whether you have yet to experience the grandeur of the Milky Way, or you are a dedicated amateur astronomer, Lassen’s dark skies offer an unparalleled view of the celestial wonders.

We welcome you to join NASA scientists, park rangers, and astronomers in celebrating all that is out of this world during the Dark Sky Festival. View the program schedule and descriptions enclosed to learn more about programs, presentations, hikes, and Junior Ranger activities.

## A few tips on night sky observation:

Dress warmly for nighttime events.

Do not use flashlights. Your eyes will become accustomed to the darkness.

Food, beverages, and smoking are prohibited.

Stargazing activities will be cancelled in the event of cloudy, stormy, or smoky weather.

If you don’t see the object through the telescope, let the operator know.

Averting your vision to the side of an object will often bring out more detail.

## Dark Sky Supporters

The Dark Sky Festival is made possible with support from the Lassen Association, NASA, Astronomical Society of the Pacific, Astronomical Society of Nevada, International Dark Sky Association, Star Chaserz, and visitors like you.

# Program Schedule

\*Space limited, reserve a spot KYVC | Kohm Yah-mah-nee Visitor Center (KYVC) | Bumpass Hell Parking Area (Bumpass Hell)

## Friday, August 9

Time	Event	Location
10:00a - 11:00a	The City Dark Film	KYVC
11:00a - 1:30p	Solar System Hike*	Mill Creek Falls Trailhead
12:00p - 1:00p	Discovering Life at Sulphur Works	Sulphur Works
12:00p - 1:00p	Our Magnetic Sun	Loomis Museum
12:00p - 4:00p	NASA Astrobiology	Sulphur Works
1:00p - 3:00p	Solar Scope Viewing	Loomis Plaza
1:00p - 3:00p	International Dark Sky Association Q&A	Loomis Museum
1:00p - 2:00p	CheMin - Minerals on Mars	KYVC
2:00p - 3:00p	Jr. Ranger Astronomy	KYVC
2:00p - 3:00p	The City Dark Film	Loomis Museum
2:00p - 3:00p	Discovering Life at Sulphur Works	Sulphur Works
2:30p - 3:30p	Future Parks of the Solar System	KYVC
3:30p - 5:00p	Exploring the Moon with Lunar Samples	Discovery Center
8:30p - 9:30p	CheMin- Minerals on Mars	KYVC
8:30p - 9:30p	Messier - Looking for Comets and Finding the Universe	Manzanita Lake Amphitheater
9:30p - 11:30p	Constellation Tour and Stargazing	KYVC & Bumpass Hell

## Saturday, August 10

Time	Event	Location
9:30a-11:30a	Jr. Ranger Astronomy	Manzanita Lake Amphitheater
10:00a - 11:00a	The City Dark Film	KYVC
11:00a - 1:30p	Solar System Hike*	Mill Creek Falls Trailhead
12:00p - 1:00p	Discovering Life at Sulphur Works	Sulphur Works
12:00p - 4:00p	NASA Astrobiology	Sulphur Works
12:00p - 1:00p	Our Magnetic Sun	Loomis Museum
1:00p - 3:00p	International Dark Sky Association Q&A	Loomis Museum
1:00p - 3:00p	Solar Scope Viewing	KYVC & Loomis Plaza
1:00p - 2:00p	Lassen, Earth, and Mars	KYVC
2:00p - 3:00p	Jr. Ranger Astronomy	KYVC
2:00p - 3:00p	The City Dark Film	Loomis Museum
2:00p - 3:00p	Discovering Life at Sulphur Works	Sulphur Works
3:30p - 4:30p	What is a Meteor Shower?	KYVC
3:30p - 5:00p	Exploring the Moon with Lunar Samples	Discovery Center
8:30p - 9:30p	Lassen, Earth, and Mars	KYVC
9:30p - 11:30p	Constellation Tour and Stargazing	KYVC & Bumpass Hell

## Sunday, August 11

Time	Event	Location
9:30a - 11:30a	Jr. Ranger Astronomy	Manzanita Lake Amphitheater
10:00a - 11:00a	The City Dark Film	KYVC
11:00a - 1:30p	Solar System Hike*	Mill Creek Falls Trailhead
12:00p - 1:00p	Discovering Life at Sulphur Works	Sulphur Works
12:00p - 1:00p	Our Magnetic Sun	Loomis Museum
12:00p - 4:00p	NASA Astrobiology	Sulphur Works
1:00p - 2:00p	When Worlds Collide	KYVC
1:00p - 3:00p	International Dark Sky Association Q&A	Loomis Museum
1:00p - 3:00p	Solar Scope Viewing	KYVC & Loomis Plaza
2:00p - 3:00p	The City Dark Film	Loomis Museum
2:00p - 3:00p	Discovering Life at Sulphur Works	Sulphur Works
2:00p - 3:00p	Jr. Ranger Astronomy	KYVC
3:30p - 4:30p	Our Moon: What Do You See?	KYVC
3:30p - 5:00p	Exploring the Moon with Lunar Samples	Discovery Center
8:30p - 9:30p	When Worlds Collide	KYVC
9:30p - 11:30p	Constellation Tour and Stargazing	KYVC & Bumpass Hell

## Perseid Meteor Shower

### Saturday and Sunday, midnight through dawn

Sightings peak at 50 or more meteors per hour in a dark sky. To enjoy the show, simply dress warmly and hone your night vision by avoiding light sources—including your flashlight!

Thank you for your attendance at the Dark Sky Festival. Donations received during the festival will benefit future astronomy events at the park.