

## THE END

We hope this geocache experience has sparked some curiosity about our solar system. If you want to find the planets in the sky at night you can look online at the astronomical calendar or at [skyandtelescope.com](http://skyandtelescope.com)

## GEOCACHING RULES

1. Respect the land. You will have to go off the beaten path at times so make sure you leave no trace.
2. Respect animals. You may come across an animal home or the animal itself. Don't destroy the home, chase or hurt any animals.
3. Respect people. You may need to cut through a campsite. Be polite and use common sense.
4. Be safe. You will hike near and cross roads. Please be aware of cars. If you drive, be courteous to other drivers.
5. **Never look directly at the real sun** unless you're wearing the eclipse shades found in the backpack.
6. After you finish, return the geocaching backpack to the office with all the fun stuff in it so others can enjoy the experience.



## GPS COORDINATES

- #1 \_\_\_\_\_
- #2 \_\_\_\_\_
- #3 \_\_\_\_\_
- #4 \_\_\_\_\_
- #5 \_\_\_\_\_
- #6 \_\_\_\_\_
- #7 \_\_\_\_\_
- #8 \_\_\_\_\_
- #9 \_\_\_\_\_
- #10 \_\_\_\_\_

**Your park fees provide for the care, protection and enhancement of this park**

### Address Inquiries To:

Jordanelle State Park  
SR 319 #515 Box 4  
Heber City, UT 84032  
Phone: (435) 649-9540  
[stateparks.utah.gov](http://stateparks.utah.gov)

### Utah State Parks Mission:

To enhance the quality of life by preserving and providing natural, cultural and recreational resources for the enjoyment, education and inspiration of this and future generations.

### Information taken from:

Ottewell, Guy: The Thousand-Yard Model or;  
The Earth as a Peppercorn (1989, 2004)



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# A Journey Through Your Solar System

***"Earth as a Peppercorn"***



**Jordanelle State Park**

# A Journey Through Your Solar System is a Geocaching Experience

## TO BEGIN

This course is about one mile long. You can travel by foot or car. If you travel by car, you will have to get out of the car to search for signs. There are 10 signs located throughout the park: one for our sun, one for each of the eight planets, and one for Pluto.

Start at sign #1 (the sun) and download the coordinates at the top right hand corner of the sign. At each sign, write down the coordinates on the back of this brochure. When you reach Pluto (sign #10) take a coupon from the cache, along with your brochure, to the park office or entrance station and exchange the coupon for a prize.

For an extra adventure, check out a backpack from the park office. It's full of hands-on activities to do along the way to help you understand our magnificent solar system.

Please make sure all items are put back in the backpack and returned to the park office when finished.

## HOW FAR MUST YOU HIKE TO SEE THE WHOLE SOLAR SYSTEM?

Can you imagine the size of our solar system? Can you comprehend that Pluto is 3,720,000,000 (billion) miles from our sun? The planets are mighty big and the distances between them are astonishingly large. In order to hike through our solar system, we need to scale it down.

**WARNING: NEVER LOOK DIRECTLY AT THE REAL SUN!**

The scale for this solar system hike is 100,000 miles = 1 inch. The sun-earth distance of 93,000,000 (million) miles = 26 yards. The sun diameter of 800,000 miles = 8 inches. See the eight-inch sun above sign #1. In the geocaching backpack you will find everyday items that represent each planet's size for this scale model.

Pluto - smaller pinhead, diameter of 0.02"  
Mercury - pinhead, diameter of 0.03"  
Mars - bigger pinhead, diameter of 0.04"  
Venus - peppercorn, diameter of 0.08"  
Earth - peppercorn, diameter of 0.08"  
Uranus - peanut, diameter of 0.3"  
Neptune - peanut, diameter of 0.3"  
Saturn - acorn, diameter of 0.7"  
Jupiter - chestnut, diameter of 0.9"

## DURING THE HIKE

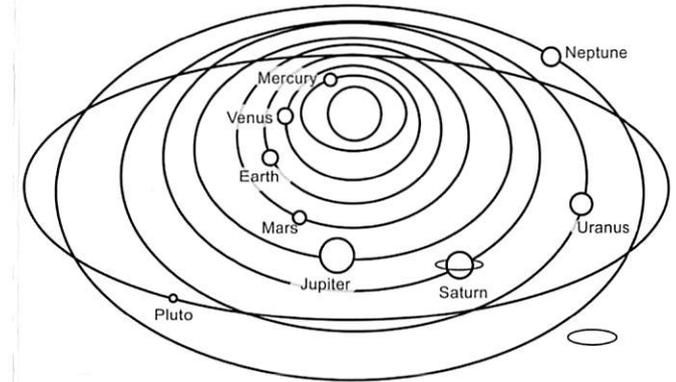
When you get to each planet hold the corresponding item up to sign #1 (the sun) and compare the size. Amazing!

Mercury is the first planet from the sun. As you hold the pinhead toward sign #1 (the sun), notice how tiny it is compared to the sun! Mercury is so close to the sun that it is merely a scorched rock, and we never see it except in the sun's glare at dawn or dusk.

When you reach Earth, hold the peppercorn toward sign #1 (the sun). It is hard to believe that the sun could warm us and support life when we are so far from it. In this scale model our moon would be 2.4 inches away from the Earth (about the length of your thumb). This is the greatest distance Man has yet leaped from Earth. Reflect on the manned missions to Mars that are being imagined.

By the time you get to Pluto you will be more than one half-mile (1,019 yards) from sign #1 (the sun), which is no longer visible. Hold the pinhead toward sign #1 (the sun) and feel the vastness of space!

# Our Solar System Orbits of the Planets



## PLUTO IS A BIT ODD

Not only is Pluto smaller than the other eight planets but it's also smaller than our moon. Its orbit is very inclined, meaning part of the huge orbit lies far above ours and part far below. So when you get to Pluto on the hike, technically you should climb a tree that is at least 300 feet high.

In 2006, Pluto was re-classified as a dwarf planet because it doesn't meet all the criteria of a planet. For more information go to [nasa.gov](http://nasa.gov).

## OUR MILKY WAY GALAXY

The sun is the only star in our solar system. The rest of the stars you see with your unaided eye are in our Milky Way Galaxy and very far away. The closest star is 4.2 light years away from Earth. It is stunning to go out at night and look at the Milky Way. The stars are so numerous and so faint that we cannot see them separately. This band of stars is just part of the galaxy in which we live.