

# UofL Gheens Science Hall & Rauch Planetarium Field Trip Opportunities

**GRADES K-3**

The UofL planetarium has field trip opportunities pedagogically geared to a variety of student ages; these experiences are aligned with national and state curriculum science standards. These engaging experiences, led by our planetarium educators, take advantage of the unique ability of the planetarium to display complex scientific data and ideas in a visually compelling manner, and incorporate demonstrations, discussions, and visualizations of actual scientific data.



**Individual field trips: 1.5 hours each  
Cost: \$7/student**

**NOTE:** For each field trip below, as a *dramatic conclusion* to your visit to the planetarium we will take a virtual tour through actual Milky Way data to ponder the age-old question of whether there may be other life out there. This exploration will focus on the several hundred exoplanets discovered so far, and our human radio signature we've been sending out into the galaxy ever since the 1930s.

## GRADES K-3

- **Moon Phases**

Beginning with the show *Our Place in Space* (see separate description of this show), students are guided by cartoon characters to explore why we have night and day and explore the relationship between Earth, Sun, and other astronomical bodies. This show is followed by vivid projections of the Earth and Moon that give the impression of floating in space. This is accomplished using one of the most advanced software programs today which seamlessly incorporates actual data to put students in an immersive visualization. Students explore the idea that half the spherical Earth (and half the Moon) is lit by the Sun at any one time, and by speeding up time the presentation visibly shows how Earth rotates to cause day and night. Virtual orbiting of Earth illustrates the concept of how the lighted appearance changes based on the position relative to Sun and Earth. Students then are guided to experience how the Moon presents regularly changing shapes (phases) in its appearance to our eyes. A planetarium-sized physical model of moon phases is used to conceptually demonstrate and describe what causes the Moon phases to appear and change in a regular pattern.

- **Seasons**

Beginning with the show *Oasis in Space* (see separate description of this show), students contemplate how Earth's position in the solar system makes it uniquely suited to life based on the Goldilocks principle: not too hot and not too cold. This is followed by use of time-lapse data used to guide students through a series of data visualizations to explore Earth's temperature patterns (and vegetation patterns) over time. Seasonal regularities are highlighted.

## **SPEND A DAY AT THE PLANETARIUM**

**Cost: \$14/student**

Schedule a morning 1.5 hour experience, break for a brown bag lunch in the planetarium lobby or outside courtyard, and come back into the planetarium dome for a second 1.5 hour experience.

Below are some recommended combinations that may be of interest, but you may combine any of our field trip offerings to fit your needs.

### Recommended Option #1 *Seasons*

+  
*Moon Phases*

Combines explorations of Earth-Sun interactions (Seasons) with Earth-Moon-Sun interactions (Phases of Moon) to collectively encompass a thorough description of the interactions of these three most prominent astronomical objects.

### Recommended Option #2 *Either Moon Phases or Seasons*

+  
*Your choice of show & star talk*

Combines a pedagogically structured experience that is closely tied to many curricula with a flexible option of engaging shows from which to select.

### **Choose a show plus a star talk (1 hour, \$5/student)**

In addition to the choices above, you are welcome to schedule a field trip as has been done in past years. Those experiences combine your choice of our existing set of shows (see separate list for options and descriptions) with a "star talk" conclusion. The star talk includes a projection of the night sky for the current season onto the dome with a tour of constellations, and how to find certain key features such as the North Star (Polaris) from the well-known and easily identifiable Big Dipper.

Please go to <http://louisville.edu/planetarium/> for more information on each field trip offering, including alignment to standards.

To book a field trip: call 502-852-6665 or e-mail [planet@louisville.edu](mailto:planet@louisville.edu).

Field trips are booked on a first-come, first-served basis. It is possible to join a previously-scheduled offering if it fits your needs, or discuss with our staff to identify an open time slot to schedule specific offerings that you choose from the options above.

Check out our special educator benefits package, including free admission for educators to public shows and discounted family memberships: [planetarium.louisville.edu](http://planetarium.louisville.edu).

