The world’s center for learning about the importance of dark skies and what lies beyond
OUR VISION

Inspire, educate, and stir imaginations to cultivate a greater understanding of our dark skies, our planet, and the universe.

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EXECUTIVE SUMMARY

The multi-functional International Dark Sky Discovery Center (IDSDC) will be unique. Why? Because no facility in the world focuses on dark sky preservation as a portal to better understanding astronomy, the space program, the universe, and life on earth.

This approach, using science-based education and interactive experiences, will establish the IDSDC as an international centerpiece for supporting the growing world-wide interest in how dark skies relate to the exploration of the cosmos, archeoastronomy, and the well-being of humans, plants, and animals. Children and adults alike will be introduced to and awed by the wonders of the universe.

The privately-funded, non-profit $18 million IDSDC will be located in Fountain Hills, Arizona and will fulfill its education mission by supporting STEM programs and fostering partnerships with Arizona State University, area community colleges, and high schools. The facility will offer programs and experiences that will inspire, educate, and stir imaginations. Additionally, it will address the rapidly growing interest in astrotourism, thus serving as an educational and experiential attraction for Arizona and beyond.

The approximately 15,000 square-foot structure includes four major components:

- **Dark Sky Observatory:** A first-class domed observatory housing a large, research-grade telescope with provisions for visual observing, astrophotography, and live broadcasts
- **Hyperspace Planetarium:** A state-of-the-art, tilted dome planetarium with immersive digital technology
- **Inspiration Theater:** A multi-use, 150-tiered-seat theater/auditorium/lecture hall with the latest 8K projection technology and sound systems
- **Immersion Zone:** A 3,000 square-foot exhibit hall with interactive and engaging educational displays, traveling exhibits, and a featured Dark Sky Immersion Experience.
Sometimes referred to as a dark sky oasis in Arizona’s Valley of the Sun, the Town of Fountain Hills is the ideal location for the planned facility. In 2018, Fountain Hills was designated as the 17th International Dark Sky Community in the world. With the added rare distinction of being near a metropolitan area, this prestigious award generated widespread publicity nationally and in many parts of the world.

The facility will be located in the Town Center to maximize synergistic opportunities with the surrounding adjacent institutions such as the River of Time Museum, Fountain Hills Library, Community Center, Community Garden, and Town Hall. Important to note is that the Town of Fountain Hills has added at least $2 million of value to this project by committing, for a nominal fee, prime Town property with adequate parking, lighting, and infrastructure.

The anticipated uses of the facility are wide-ranging and include working partnerships with other institutions, lectures, public viewing and research in the observatory, planetarium shows, advanced placement courses, astronomy camps, lessons in astrophotography, exhibit competitions, video productions, star parties, tours, visits, receptions, and much more.

The value the IDSDC brings to education in Arizona is recognized by Governor Doug Ducey with his support statement, "The International Dark Sky Discovery Center is an exciting opportunity for students and amateur star-gazers alike. The Center will be another tremendous asset to keep our state at the forefront of STEM education."

The educational quality and sustainability of this outstanding venture is further assured by the statement from Arizona State University’s President Dr. Michael Crow, “Arizona State University looks forward to developing a collaborative relationship with the International Dark Sky Discovery Center.”

Upon reaching the fundraising goal, the strong, diverse talents of the IDSDC Board of Directors and the incredibly strong support from the entire community assures successful implementation. The IDSDC won’t be a Fountain Hills attraction. It will be an international attraction in Fountain Hills that will benefit the entire state of Arizona.

Through generous private funding, this unique, engaging discovery center will become reality.
The 15,000 square-foot IDSDC will accommodate extensive educational activities while also offering opportunities for engaging, interactive experiences that will appeal to all ages and education backgrounds. Overall, the facility is designed to be adaptive, functional, and capable of utilizing the latest technology to achieve its mission.

“To confine our attention to terrestrial matters would be to limit the human spirit.”
Stephen Hawking, Astrophysicist

**Facility Design**

[Diagram of International Dark Sky Discovery Center floor plan]
The 20.5-foot domed observatory will feature a 27.5-inch (.7 meter) PlaneWave telescope with fused silica optics designed for public viewing, research, live broadcasts, and astrophotography. The telescope’s control computer will operate the observatory from either the adjacent control room or from within the observatory.

Included with the installation are a deep space imaging camera, a lunar/planetary camera, and an ADA compliant eyepiece system. Additionally, a power control and data management system, a safety and interlock system, an environmental control and monitoring system, and a weather computer will support the technical requirements of the Dark Sky Observatory.

Supplementing the observatory are additional high-quality, portable telescopes that can be wheeled out to the adjacent Centennial Circle Plaza for star parties and the annual Dark Sky Festival. Together with the Dark Sky Observatory, there is no other comparable astronomical viewing experience in the Phoenix metropolitan area.
Hyperspace Planetarium

The 40-seat planetarium takes advantage of the latest projection technology to deliver laser sharp images on the 32-foot diameter, tilted dome. By utilizing the new, innovative approach of a tilted dome, seats are arranged in a half circle to give everyone in the audience a full view of the 360-degree projection. This greatly enhances the full immersion experience and also allows the planetarium to be used as a classroom.

Further enhancing the experience is 3-D digital technology that gives an extra degree of freedom to simulate a view from any point in space, not just the earth-bound view with which we are most familiar. This helps audiences better understand the true layout of the solar system and beyond.

Inspiration Theater

The multi-use Inspiration Theater with tiered seating and an acoustically controlled environment has approximately 150 seats. The latest 8K projection technology and surround sound systems will professionally present the various anticipated productions. A separate sound system designed specifically for lecturers or speakers will be provided and the lighting technology will be capable of adjusting the brightness levels of the stage or the entire auditorium. Most of these technologies will be managed from the control room at the rear of the Inspiration Theater.
Sized at just over 3,000 square feet, the Immersion Zone will be a unique exhibit hall combining static and interactive displays designed to educate and inspire visitors of all ages. Multiple themes will appeal to the varied audiences. Astronomy-related displays will expose visitors to the wonders of the universe. Space-related information will highlight past, current, and future space explorations. Exhibits will also demonstrate the relationship between dark skies and life on earth.

A planned, very engaging display found nowhere else will be the Dark Sky Immersion Experience. Choose your location in the world and see what people who live there see in the night sky. Or travel to the darkest location on the planet and see a sky so filled with stars you might think it’s not real. But it is.

All exhibits will work in concert to answer intriguing questions. What are occultations and how were they used to redirect the New Horizons spacecraft? What does a truly dark sky look like versus a light-polluted sky? Why does the American Medical Association recommend for health reasons lower correlated color temperatures for outdoor lighting? Why are dark skies important for wildlife, plants, and humans? And how has humankind depended on the night sky throughout history?

Overall, the goal of the Immersion Zone will be to create a fun and memorable educational experience that ENGAGES. Why? Because as Benjamin Franklin stated, “Tell me and I forget, teach me and I may remember, involve me and I learn.”
Classroom

Up to 40 students can be accommodated in the classroom depending on the table and chair arrangement. Multi-use is the operative word for the classroom because it will be used for activities that may require a configuration different from the typical classroom setting. For example, it might be set up as an activity room on a day when a number of younger children are scheduled to visit. Because of the varied usage, an adjacent storage area is provided for the assorted materials and furniture that will be needed.

Lobby

The lobby is sized to handle larger groups that could arrive at the same time. Examples are people attending a special program in the Inspiration Theater or busloads of students or visitors arriving for an educational event. The lobby is also sized to handle small private functions that could involve food and beverages. The storage area immediately to the rear of the Inspiration Theater is intended for the tables and chairs that will be used for these special events.

Remaining Areas

Gift Shop
The approximately 300-square-foot gift shop will offer a considerable assortment of merchandise related to astronomy, space, and dark skies.

Coffee Shop and Outdoor Patio
The coffee shop will offer drinks and snacks and a place to take a break either inside or on the private outdoor patio while visiting the IDSDC.

Offices and Administrative
There are two levels in the office/administrative area. The main level has three offices including the director's office and a work area that accommodates the needs associated with catered events. The upper level has additional offices and storage.

Other Areas
The remaining space includes telescope storage, technical and security control rooms, restrooms, mechanical and janitorial rooms, and general storage.
Fountain Hills, Arizona, with the distinction of being the world’s 17th International Dark Sky Community and its proximity to a major metropolitan area, is an ideal location for the IDSDC from both a functional and sustainability perspective. Its dark skies support the observatory-related activities of the facility while the population in excess of four million people living in the Greater Phoenix area helps ensure the project’s sustainability.

The IDSDC will be located in the Town Center. The Town demonstrated its strong support for the IDSDC with the Council’s unanimous vote to approve the leasing of a site on Town property at a nominal annual fee. This area is a hub for institutions that attract visitors, thus offering synergistic and integrated marketing opportunities.
The adjacent entities include the Community Center, Fountain Hills Library, River of Time Museum, Fountain Hills Community Garden, Town Hall, and a sculpture garden. Fountain Hills is fortunate to have one of the darkest night skies of any community near a major metropolitan area. The McDowell Mountains to the west help shield the nightglow of the Phoenix metro area. Having the Salt River Pima-Maricopa Indian Community to the south, McDowell Mountain Regional Park to our north, and the Fort McDowell Yavapai Nation and Tonto National Forest to the east all help protect the dark skies.

A number of residents have moved to Fountain Hills because of its dark skies. The local astronomy club has over 600 people on its mailing list and coordinates regular star parties. One of its founding members donated three telescopes to the Fountain Hills Library to be available for checkout, which led to a national award for the library.

The community takes pride in its night skies and its designation as an International Dark Sky Community, as denoted by the entrance signs to the community.

Because of the dark skies and significant astronomy-related activity, there is great community interest in the construction of an International Dark Sky Discovery Center.
The range of programs and exhibits planned for the IDSDC is extensive and the list of ideas keeps growing. While the facility will focus on education in space-related science and the importance of dark skies, there are anticipated uses that will fall outside that scope, particularly in the multi-use Inspiration Theater that could be rented by various groups and organizations.

The following is a partial list of plans for how the facility will be used:

**Partnerships with universities**

There are no observatories with large, research-grade telescopes in the Phoenix area. While students at the University of Arizona in Tucson and Northern Arizona University in Flagstaff have those facilities nearby, Arizona State University, the largest university in the country and the extensive Maricopa County Community College System do not.

College students could learn how to use a large telescope, conduct research, and attend classes and lectures on sub-specialty areas of astronomy.

Arizona State University’s Osher Lifelong Learning Institute could offer courses for adults at the facility.
**Partnerships with high schools**

High Schools have advanced placement programs, some of which focus on space science. Those students could be taught how to use an observatory and attend astronomy-related lectures. Some local high school students having an intense interest could be given extended access to the Dark Sky Observatory and teach other students. The local high school principal has already expressed interest in adding an AP Capstone program based on astronomy using the IDSDC.

**Visits by middle schools and high schools**

The facility can easily accommodate school groups by dividing the students into separate but simultaneous activities: planetarium show, Immersion Zone tour, theater presentation, and viewing of the Dark Sky Observatory.

**Tours and visits by area residents and tourists**

The facility’s many offerings will be an attraction for area residents and tourists from around the world. There will be special shows and presentations in the Inspiration Theater and Hyperspace Planetarium. The Immersion Zone will be interactive and engaging. Viewing through the very large telescope is always a great experience and will encourage people to attend a star party. Astronomy Magazine recently hosted a 9-day tour of Arizona’s astronomy-related facilities. This is just one specific example of a visit that would occur after the facility is completed.

**Astronomy Camps**

There are no astronomy camps in Arizona’s largest metropolitan area even though Arizona is known as the astronomy state. This is currently an unmet need. For people in the Phoenix area, attending an IDSDC astronomy camp would be less costly and more convenient than traveling a long distance. In addition, people from out of state attending conventions or visiting the Phoenix area might also choose to take advantage of a local astronomy camp.
Star Parties
Star parties already attract a large number of people on a regular basis. These would continue, but the attraction of a very large telescope would certainly increase attendance. Additional telescopes on wheels would be rolled out adjacent to the observatory so that multiple stellar objects can be viewed.

Astronomy on Tap
This is a nationwide movement in the astronomy community and the IDSDC is a perfect venue for hosting this program. Attendees gather to have a craft beer or other beverage along with snacks while listening to an astronomy-related lecture.

Other Inspiration Theater Activities
Besides its science-focused lectures and video productions, the tiered-seating auditorium can serve other purposes when it is available. Several organizations have already expressed interest in using the auditorium for meetings and presentations. Ideas, such as groups wanting to show arthouse movies, is another of many that have been suggested. Many other ideas will undoubtedly surface, all of which can contribute to the sustainability of the IDSDC.

Exhibit Competitions
The Immersion Zone will be interactive and engaging, but it also needs to be continually updated. Exhibit design competitions among university and/or high school groups could be held with the winner or winners awarded a monetary prize and having their exhibit displayed for a period of time. In addition, traveling exhibits are available that would add new displays on a regular basis.
Astrophotography Classes

There are various subspecialty interests in astronomy. One such interest is astrophotography, and the Greater Phoenix area as well as Fountain Hills have some accomplished astrophotographers. Classes could be given, access to the large telescope could be offered, and outstanding photos could be displayed, some of which could be offered for sale.

Astronomy Research

The dark skies of Fountain Hills combined with a very large telescope will be of great interest to both students and adults having a passion for exploring the universe.

The Dark Sky Observatory will join existing research projects (such as the RECON network funded by NASA and administered by the Southwest Research Institute) to study asteroids in support of current and future space missions. This research is already being conducted by Fountain Hills residents and will be greatly enhanced with the addition of a large telescope.

Demonstrating Fountain Hills’ dark skies, an amateur astronomer named Charles Juels, discovered over 400 new asteroids with his back-yard telescope in Fountain Hills. As a result, there is even an asteroid now named Fountain Hills.

Private Events

Renting the facility for parties, receptions, and corporate events is common practice in museums across the country and is an activity representing a great opportunity for the IDSDC.
MARKETING

The marketing strategy for the IDSDC falls into three categories:

- Stand-alone
- Integrated
- Astrotourism

**Stand-alone**

Similar to comparable institutions, the IDSDC will develop both printed and online marketing-related materials to promote the facility and the special programs that are offered. Additionally, focused marketing will be used to establish relationships with area educational organizations to encourage student visits.

Widespread publicity, which is essentially free marketing, can be obtained when the attention of news media is captured. A few examples are a special astronomical event that can be broadcast in the Inspiration Theater, a new music and laser light show in the Hyperspace Planetarium, or a lecture by a distinguished guest.

Opportunities to rent the IDSDC for private parties and small corporate events will also be promoted.

To maintain continued interest for all visitors, a concerted effort will be made to frequently change the programming with new shows, new exhibits, and new activities.
**Integrated**

One of the important factors in choosing the specific location for the IDSDC is its proximity to surrounding entities with which it can create a synergistic relationship. The adjacent entities are the River of Time Museum that focuses on the history of the Lower Verde Valley, the Community Garden that is the finest in the entire Southwest, the Fountain Hills Library, a first-class sculpture garden, and the Fountain Hills Community Center.

Part of the promotional effort will be to integrate the marketing of these entities. By doing so, potential visitors are more likely to travel to Fountain Hills for the opportunity to experience all these facilities that are in the same location. Marketed appropriately, the IDSDC and surrounding entities together will be a significant attraction in the Phoenix area.

**Astrotourism**

The IDSDC, in a designated International Dark Sky Community, has a perfect opportunity to help serve the world-wide growth in astrotourism. As stated recently in the New York Times:

>“Resorts, parks and attractions in the United States, Canada, Mexico and beyond are expanding the galaxy of what has become known as astrotourism.”

Many from around the world who have an interest in astronomy already travel to Arizona to visit Kitt Peak near Tucson, the Mirror Lab at the University of Arizona, and Lowell Observatory in Flagstaff. The IDSDC can be an additional stop for these travelers flying into Sky Harbor airport.

Catering to astrotourism are a growing number of hotels around the world that have telescopes available for guests. Some restaurants offer astro-themed food, such as a starry night margarita or a dessert in the shape of a galaxy.

In Fountain Hills, the Marriott CopperWynd Resort has developed a customized night-sky and presentation program for their guests. The program uses the expertise of what they are calling “Star Dudes,” who happen to be IDSDC Board members.

Laser tours of the night sky have become popular, and these are offered at the annual Dark Sky Festival in Fountain Hills. Combining a laser tour with a viewing through the large observatory telescope will certainly attract visitors from throughout the Phoenix metropolitan area.
During the spring of 2019, Dr. David Swindell, ASU professor in the Department of Public Affairs and Director of the Center for Urban Innovation, guided his masters-level students as they conducted a feasibility study for this project. Their 29-page report yielded much valuable information along with estimated construction costs and a 5-year proforma of operating costs that helped assess feasibility and guide further research.

At that time, the facility was referred to as the Astrosience Discovery Center (ADC). Since then, the name was changed to International Dark Sky Discovery Center to reflect the theme and vision that was adopted.

The conclusions of the feasibility study include the following:

“For my part I know nothing with any certainty, but the sight of the stars makes me dream.”

Vincent Van Gogh, Artist

“The ADC will fill a gap in space-science education for the local and neighboring area school districts. The market for observatories and planetariums has shown its resolve through similar facilities that are able to sustain themselves.

“Additionally, community support for building of the ADC is strong. This is critical for establishing a lasting relationship between the ADC and town residents. This project is supported by the mayor, the town manager, and the local school district of Fountain Hills.

“Not only does the ADC contribute to the local economy in Fountain Hills, but also to the global astro-tourism industry.”

The IDSDC Board is very appreciative of the work done through Arizona State University and have applied the findings to the ongoing planning process.
“The International Dark Sky Discovery Center is an exciting opportunity for students and amateur star-gazers alike. The Center will be another tremendous asset to keep our state at the forefront of STEM education.”
**Governor Doug Ducey, State of Arizona**

“Dark sky tourism is a major draw for the State of Arizona, and we believe the International Dark Sky Discovery Center will be an extraordinary asset for our state.”
**Debbie Johnson, Executive Director, Arizona Office of Tourism**

“As the 17th International Dark Sky Community in the world, our Town is a perfect location for the International Dark Sky Discovery Center and we strongly support the collaborative effort.”
**Ginny Dickey, Mayor, Town of Fountain Hills**

“The Fountain Hills Chamber supports the development of the International Dark Sky Discovery Center. We believe it will be a wonderful attraction for residents and visitors and a great benefit for local businesses.”
**Betsy LaVoie, Executive Director, Fountain Hills Chamber of Commerce**

“Arizona State University looks forward to developing a collaborative relationship with the International Dark Sky Discovery Center.”
**Dr. Michael Crow, President, Arizona State University**

“Educating people about the wonders of the night sky and the importance of preserving dark skies is a goal we share with the International Dark Sky Discovery Center.”
**Ruskin Hartley, Executive Director, International Dark Sky Association**

“Dark skies are critical to Arizona’s multibillion-dollar astronomy industry, and we appreciate the efforts in Fountain Hills to maintain and promote dark skies in the Phoenix area and statewide.”
**Dr. Jeffrey Hall, Director, Lowell Observatory, Flagstaff**

“The mission of public astronomy is inspiration, contemplation, and education. We look forward to welcoming the International Dark Sky Discovery Center to this important public service.”
**Mark Pine, Deputy Director, Griffith Observatory, Los Angeles**
We have lingered long enough on the shores of the cosmic ocean.

Carl Sagan

To learn about naming rights opportunities or other ways to support the IDSDC, contact:

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