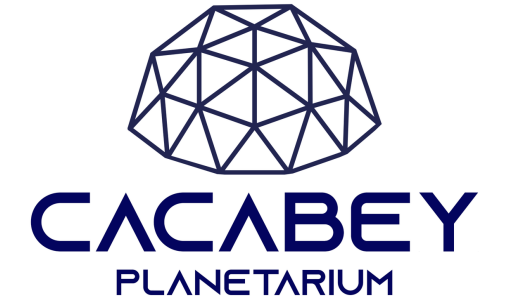


CACABEY

PLANETARIUM

Who we are?



CACABEY PLANETARYUM is the first and leading Planetarium Systems company in Turkey, which uses the newest technologies in the world, offers them to use in our country and makes domestic productions in the electronics sector.

Our company offers the latest technologies, with efficient and affordable systems, necessary for the progress of our country in the private and public sectors and to take its place among the developed countries. It is a company that supports its staff with domestic and international trainings to produce top-notch solutions and to acquire the ability to work smoothly for many years. As a company with more than 15 years of experience, thanks to its team that can use the latest technology in dome systems, it has taken important steps in reducing Turkey's foreign dependency on this issue by producing planetarium devices with its software and hardware. It has made advanced dome and screen technologies into products in our country. Cacabey Planetarium manufactures modern planetarium devices and equipment and continues its R&D studies with its strong team led by Dr Uğur Özen, one of the founders of Cacabey Planetarium. The company provided the domestic production of many planetarium films. It also worked on hardware and software issues such as modeling, animation, and the installation of the advanced game studio infrastructure within the company, which enable the team to make the necessary research and development for modeling, motion analysis, use of game engines and software. Our excitement started about 20 years ago; it became institutionalized in 2011 and turned into a team and became one of Turkey's leading IT companies in 2020.

"Cacabey Planetarium is a member of IPS (International Planetarium Society) And our quality has been registered by APLF (Association des Planetariums de Langue Franciouse).

VISION

To produce solutions on Information Technologies, to make long-term R&D and investments, to become a world brand; our vision is:

- **Global market target, competition, and self-confidence**
- **Pioneering solutions that will make a difference**
- **Continuous R&D awareness***

MISSION

To provide reliable and original solutions for public and private sector institutions, to reduce the need for ready-made solutions, and to open up to the world by creating a business area for ambitious Turkish engineers; our mission is:

- **To follow innovations and technology**
- **To produce domestic, high quality and competitive products**
- **Support services and justified customer satisfaction**

"Our company is leading the sector with its experience, especially thanks to R&D.

WHAT IS PLANETARIUM?

Planetarium or planetary house is the name given to the show halls in which the artificial image of the sun, stars, planets, and other celestial bodies is projected onto the dome-shaped ceiling with the help of a special reflector.

The most important feature of a planetarium is its dome-shaped screen and the sky, celestial bodies and similar images projected onto that screen with special tools. It provides realistic simulation of movements in space. The images used can be obtained using many optical and electro-mechanical technological tools. These systems can view the sky, which can be viewed from any point in the world in the past, future, or present. Thanks to the new generation digital projectors OpenGL and Silicon Graphics technology, it has expanded its range of shows and presents shows on a wide variety of subjects, from the journey through the blood vessels of the human being to the works of Renaissance artists. From this point of view, a contemporary planetarium is a show environment where every subject from art to science can be presented. In addition to recreating the night sky, advanced reflectors offer computer-aided simulations such as levitating from the ground and navigating between Saturn's rings by passing through meteorites. In a planetarium, spectators sit in a circular arrangement and watch various projections on the dome-shaped ceiling. Demonstrations are often presented live by a person competent in astronomy. The reflector in the middle of the hall projects images of stars and planets onto the dome, enlivening the night sky.



CACARIUM FISHEYE



TECHNICAL FEATURES OF

- **Cacarium Enhanced Control Stand**

Optional touch screen option

- **Cacarium Astronomy Simulation Software**

Ability to perform fulldome demonstrations

- **Enhanced Fisheye Projection with Contrast Adjustment**

Grounded power cable, DVI cable, RGB cable option

Contrast ratio: 10,000 – 30,000

- **DLP (Digital Light Processor)**

Resolution: 1,200 x 1,200

Brightness: 5000 – 7000 ANSI lumens

- **20,000 hours light source 10 times operating life**

Compared to standard 2000 hours bulb life

- **Power Supply – 100–240V AC, 50/60Hz (Multi Voltage) Power**

- **Planetarium Projector, Fulldome Display**

Deep space simulation and fulldome demonstration support



PLUSSTAR 1

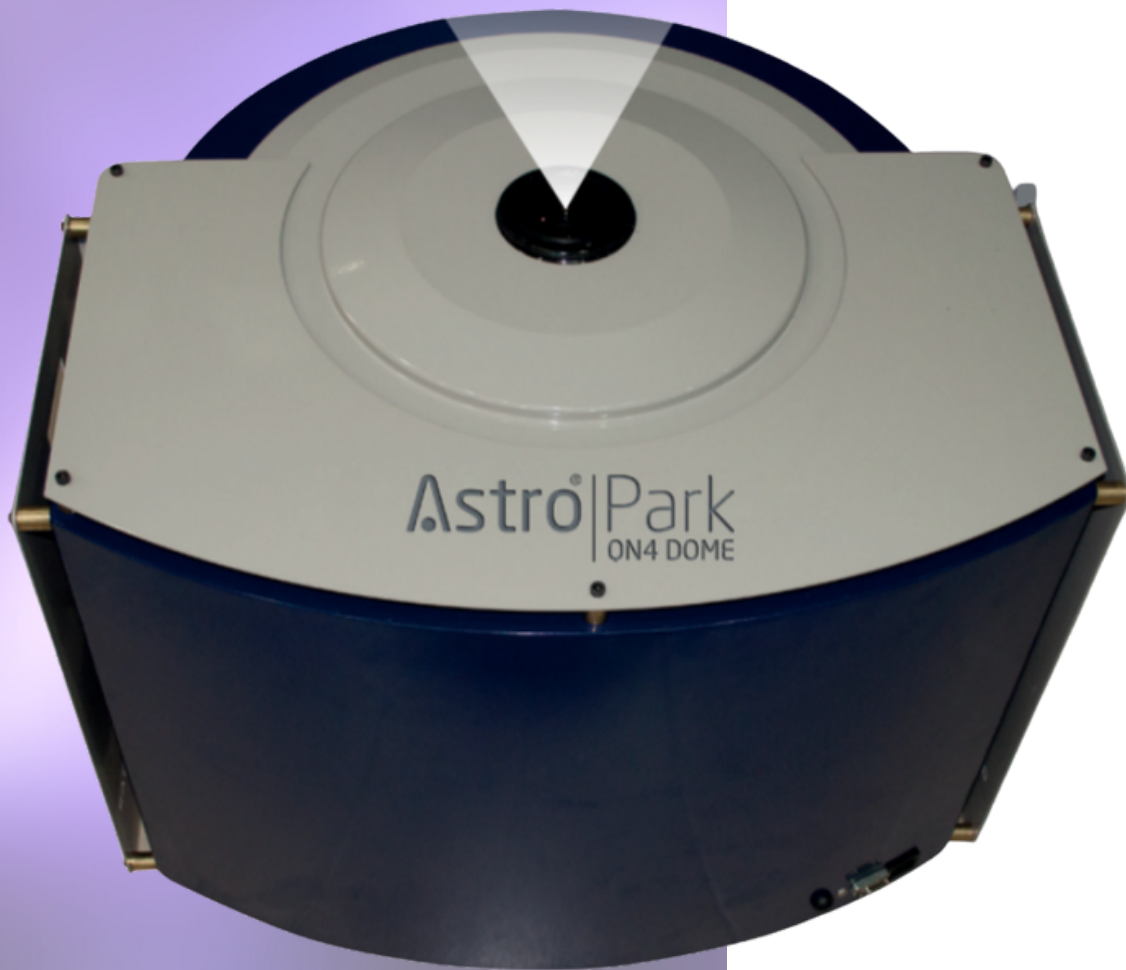
*3500 ANSI lumens



PLUSSTAR 2

*4500 ANSI lumens

Technical usage information and technical training regarding the operation of the system will be provided to the technical staff determined by the institution.



ASTROPARK QN4 FULL DOME

- Cacarium Quanto Fisheye
- SXRD High Definition

4KX2Full HD with Liquid Crystal Display Panel

CACARIUM QUANTO FISHEYE

TECHNICAL FEATURES OF

- **4K SXRD**, an invention of Sony Corporation

Or silicon X-tal (crystal) reflective design

- **High-definition display device projectors**

A specially designed high panel of 4000:1 provides contrast.

- **8.85-megapixel resolution (4096H X 2160V)**

It is 4 times larger than 2-megapixel Full HD.

- **4K SXRD device four times deep black tones**

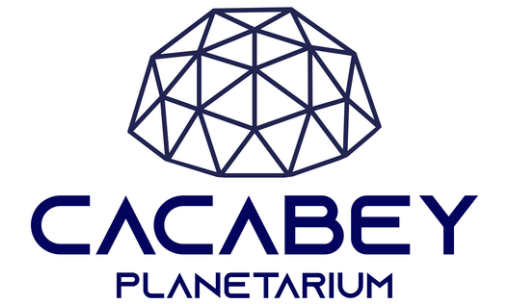
Creates sharply clear, high-quality images

Original 4X2K SXRD display ensures resolution

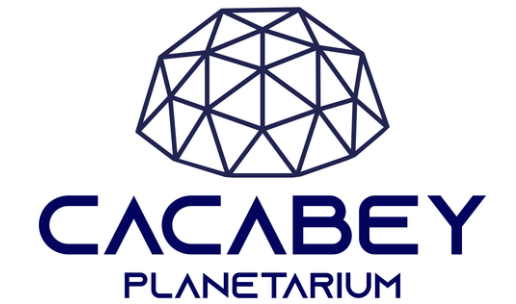
- **Color spectrum including RGB (red, green, blue)**

Creates an image with 26.550,000 pixels

For each of the basic colors



OPTO-MECHANICAL PLENATARIUM



Megastar is the next generation Planetarium Opto-Mechanical star projector. Under normal conditions, it allows to watch between 6 and 13 stars, up to the 6th and 7th magnitude, which is the limit of human vision. It also creates the visuality of deep space objects.

- **REALISTIC SKY FEEL**

It can track more than 140 deep space objects. (Galaxies and nebulae)

- **EXTRA PHOTO EFFECT**

Thanks to its extra graphic feature, it reflects the visual themes of the constellations on the dome at the same time. It has automatic geometry feature.

- **EXTRA PLANET PROJECTORS**

The other comparator of the optomechanical system is the planet and star projectors. Thanks to these projectors, the effective structure of the solar system can be examined. It can perform events from solar eclipses to Venus transits.



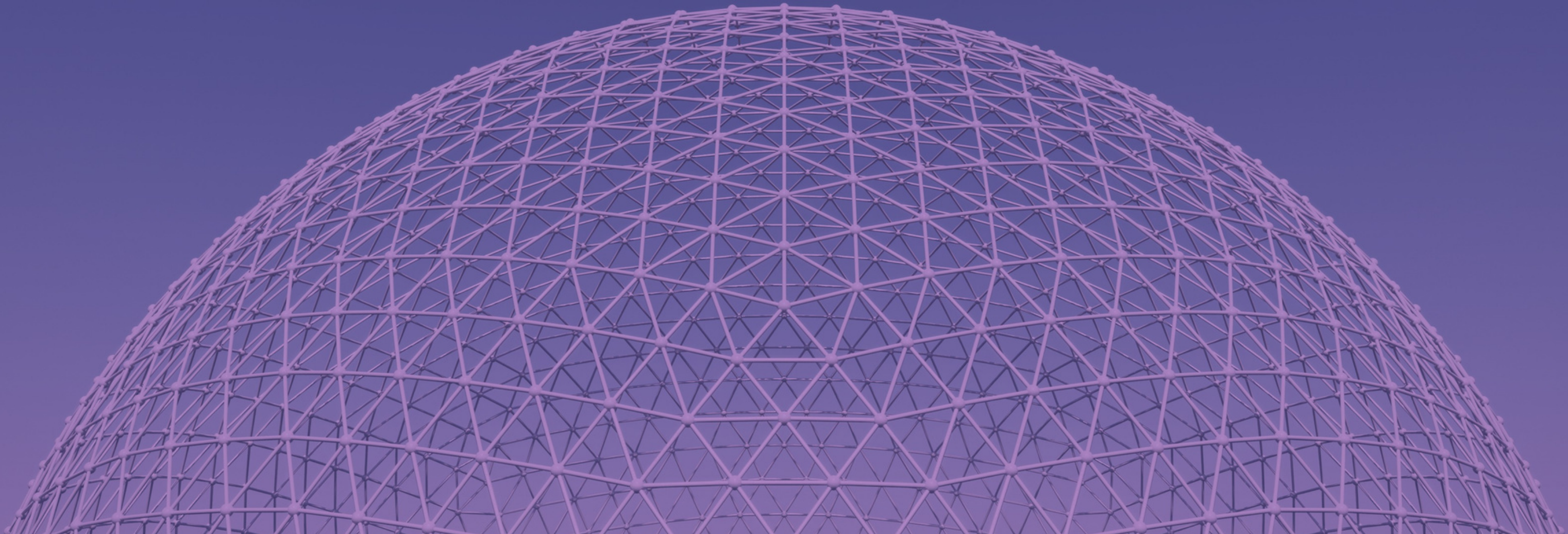
DOME SYSTEMS

Planetarium Dome Systems are structurally divided into 3 categories.

K1 Geodesic Domes

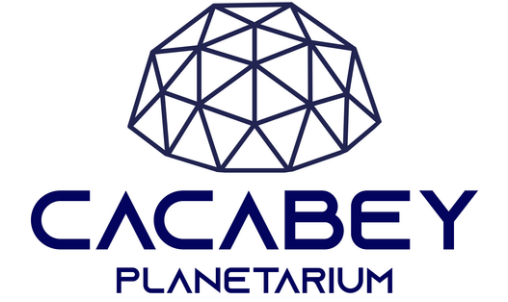
K2 Hybrid Domes

K3 Nano Connected Domes





Geodesic Dome



Portable planetarium domes have a specially designed ergonomic structure.

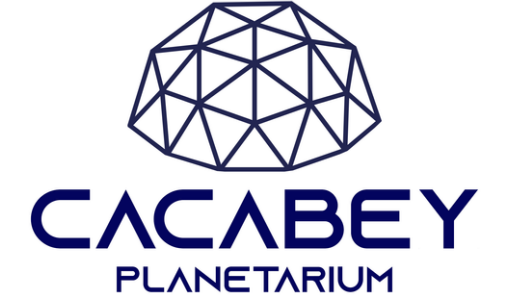
It is ready in 3-4 hours with simple installations for easy use and for use by users of all levels. The planetarium dome, which is made of special fabrics, is prepared with non-combustible and fireproof materials. Carrier systems are made of aluminum parts in 3 different sizes and 45-60 connection apparatus.

Geodesic domes are offered with special fabric options and ergonomics to reduce weight with innovation that does not make the audience fall and panic even in the event of interruption of the blowing devices.

* Mobile Usage



Hybrid Dome

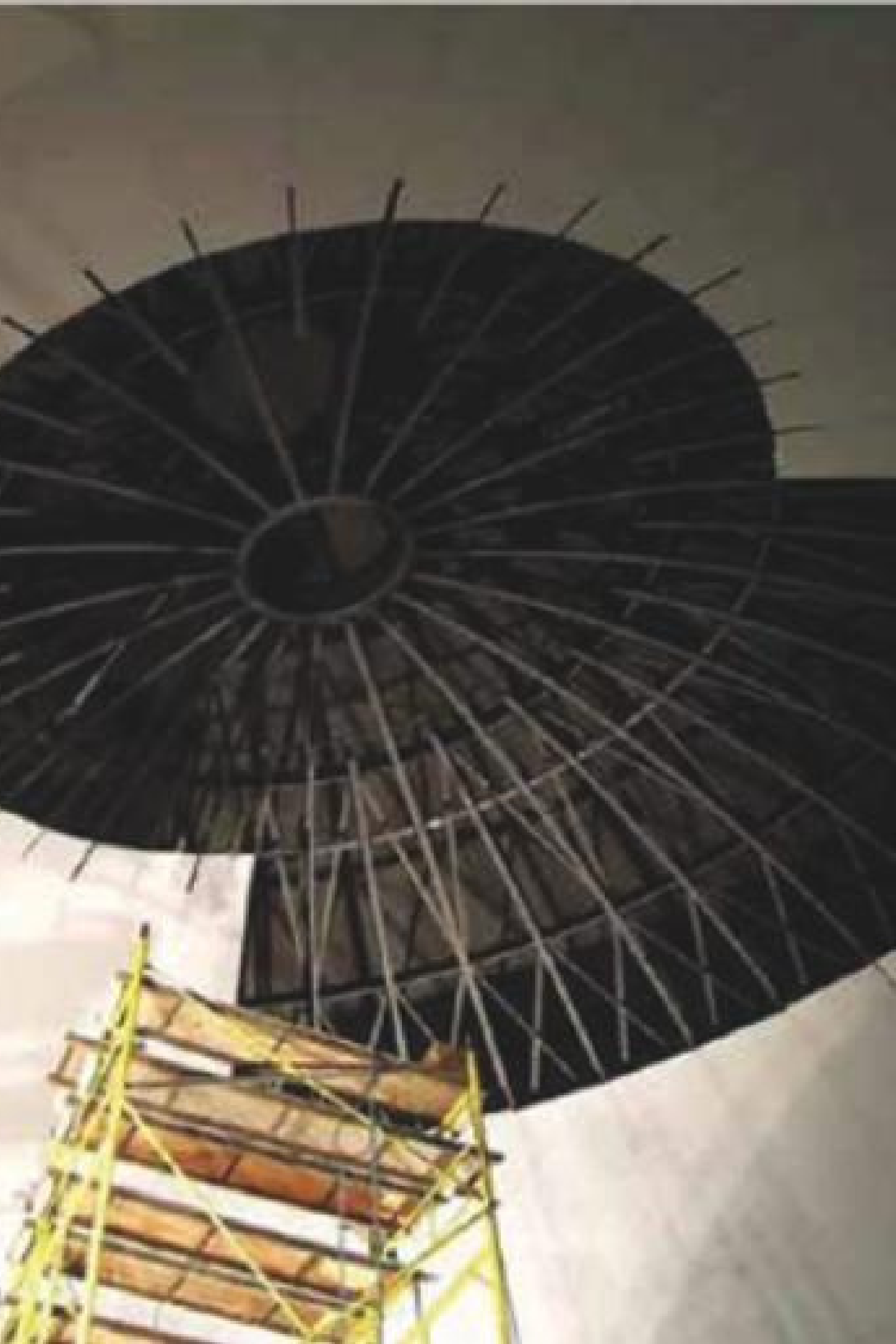


It is possible to say that the Hybrid Planetarium domes, which are designed for indoor and outdoor use, are semi-mobile, semi-fixed.

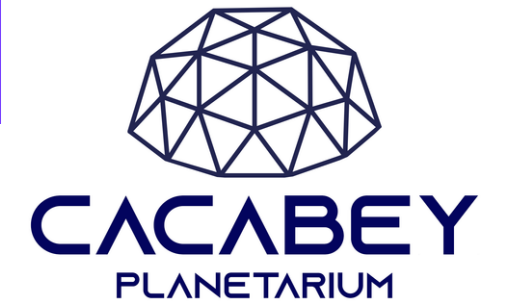
In the planetarium, which has managed to attract the attention of people of all ages in the area where it is exhibited with its original design; There are floors built on concrete formwork, seats produced in accordance with the planetarium, floor covering, heating and cooling systems and lighting.

While the outer dome is fixed, the inner dome can be used mobile.

* Quick Installation



Nano Connected Dome



As screen systems evolve, the demands increase for an advanced projection surface. It unleashes Nano Connect, which revolutionizes the toughest dome screen technology. Nano Connection offers us the smoothest spherical surface among existing systems.

The reasons why it is preferred are that each panel is seamlessly joined at the horizontal and vertical connection ends, as well as a new process used, and the rivet screws are embedded so that they are not visible on the surface of the dome. In this way, each rivet is flush with the dome screen.

Besides these, An environmentally safe process, powder coating eliminates the need for on-site painting, providing a durable smooth polish that will not change or deteriorate over time. The powder-coated panels used in the domes are very easy to clean and never require repainting. If there are damaged panels, they can be easily replaced with spares so that they match the colors and brightness of the existing panels.

* Full Equipment; Smooth Joins > Invisible Rivets > Perfect Mirroring

Technical Service Guarantee

Onsite Service by Cacabey Planetarium

- 12 Hour Phone Support
- 12 Months Cacabey Warranty
- Planetarium Control Computer Support
- Production Support
- Spare Parts Warranty





PROJECTION SYSTEMS

Planetarium Imaging Systems are divided into 3 categories according to their characteristics.

P1 Mirrored Projections

P2 Fisheye Projections

P3 Multiple Projections



Fisheye Projection



They form the basis of planetarium displaying systems and are used in single projection systems as well as supporting multiple displays.

Thanks to the richness of the image provided by this system, not only astronomy but also other branches of science have begun to attract attention in planetariums. However, as the size of the planetariums grows, the image quality becomes insufficient.

* Diameter 3–7 meters



Multiple Projection



These systems, which are especially used for fixed planetariums, need to increase the imaging systems in proportion to the growing dome size.

It is necessary to optimize the resolution by making fine calculations for these projections with varying numbers. Considering the number of pixels per unit surface for viewing areas, multiple projection systems should be used in planetariums of 7 meters and above.

* 7 meters diameter

System Installation and Training

- Site Preparation Guide
- Equipment Guides
- Software Guides
- System Settings and Calibration Data

All system trainings will be carried out in detail at the place where the planetarium is installed covering the installation and usage phase.



COMPLEMENTARY SYSTEMS

Planetarium Complementary Systems Increase the quality of your events.

- **Interior Arrangements Award**
- **Winning Movie Pool**
- **Stellarium**

Interior Arrangements

Acoustic Panel

Planetarium acoustic panels will increase the pleasure you will get from the shows. Every projection system needs an acoustic panel system to reflect its own power. We adapt the acoustic panels with the system determined for the dome.



Ground

Optimum use of the ground inside the dome. It is very important to make the best use of the available space during the design phase of the planetarium interior floor platform. We aim to ensure that the seating arrangement is easily and quietly accessible with the design of steps or paths determined.



Armchairs

To provide more comfortable presentation watching: We are renewing the seats in the planetarium and creating a more comfortable experience for the visitors. With the seat alternatives we will offer you, we replace your old seats with modern and comfortable seats



Interior Arrangements

Sound system

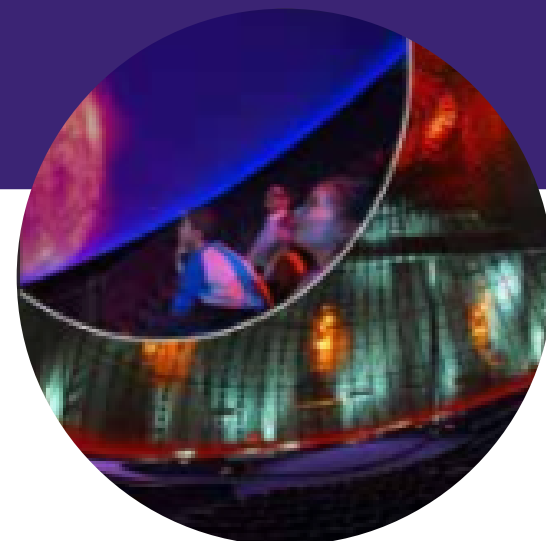
Maximize the movie and presentation experience. To fully experience the presentations and demonstrations in the planetarium, a sound system suitable for the system is required. We offer the best solutions for you.

"Making sound system suitable for acoustics (1 unit)



Lighting

Turn the planetarium into a visual feast with the lighting system. We design the Planetarium interior lighting in the best way with the controllable RGB LED lighting add-on.



Control Cabinet

You are in full control of the planetarium. We designed it to renew the control console in the control cabinet and to work in the best way with the installed system. Planetarium presentations are getting much more interactive.



Interior Arrangements

Accessibility

We are creating a viewing area for disabled individuals inside the Planetarium interior floor platform so that everyone can experience the planetarium in the best way possible. Thus, your planetarium service is accessible to everyone.



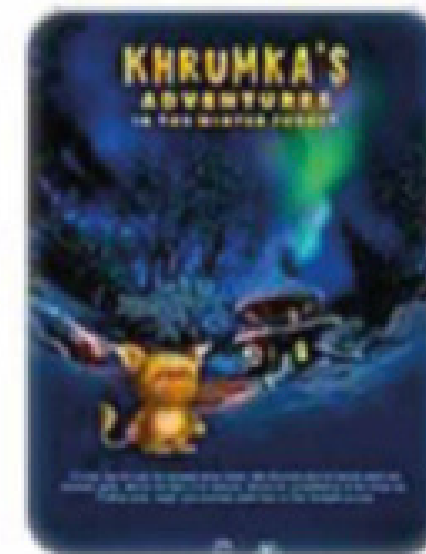
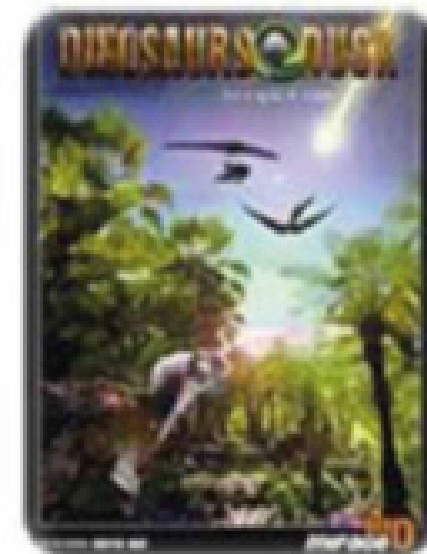
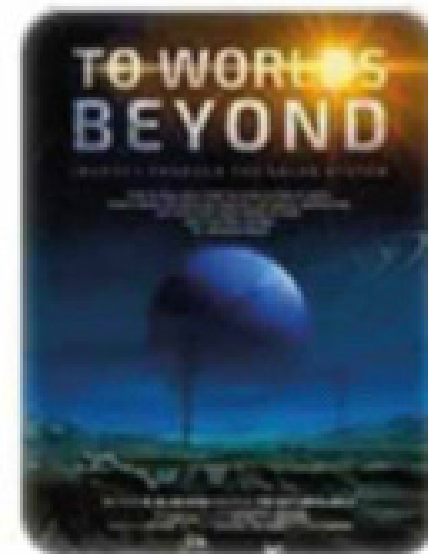
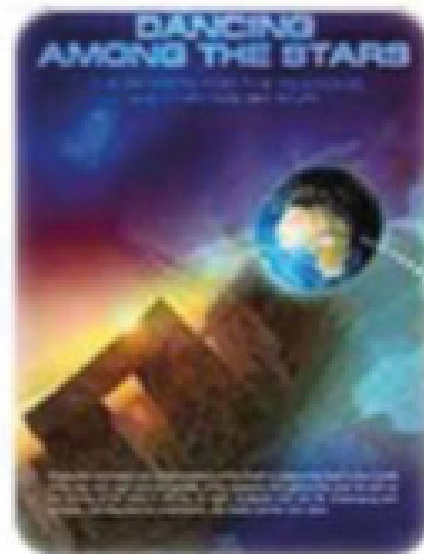
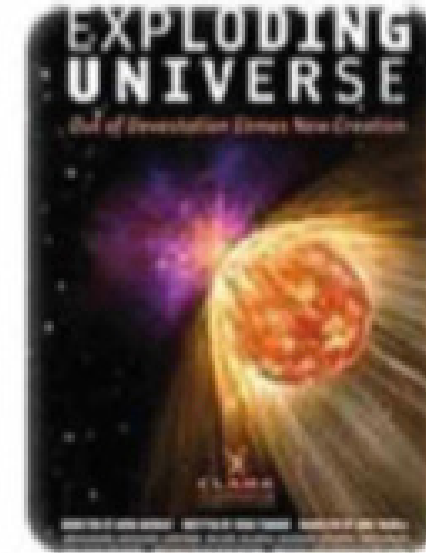
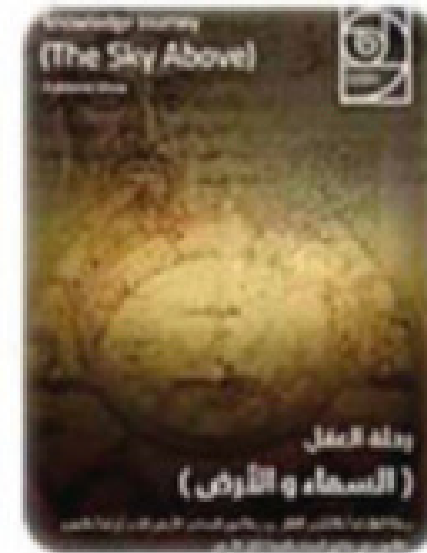
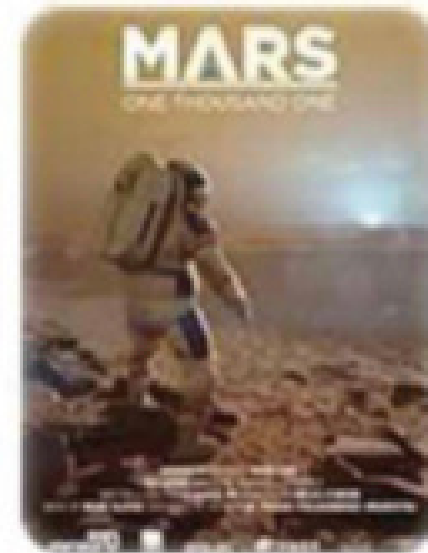
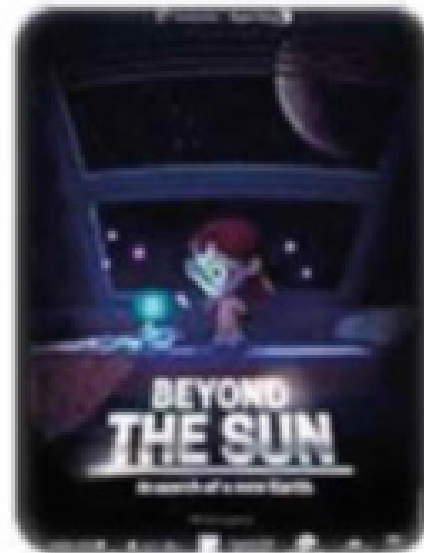
Disabled Ramp

Everyone has the right to access the planetarium. To increase accessibility, we make life easier by making ramps on both sides as entrance and exit for disadvantaged individuals. Along with the 120 cm ramp width, the slope also varies between 6% and 10% depending on the location.



Award-Winning Movie Pool

We are following the planetarium film industry up to date with our rich movie pool full of world-famous, award-winning content that you cannot see in many planetariums.



Stellarium

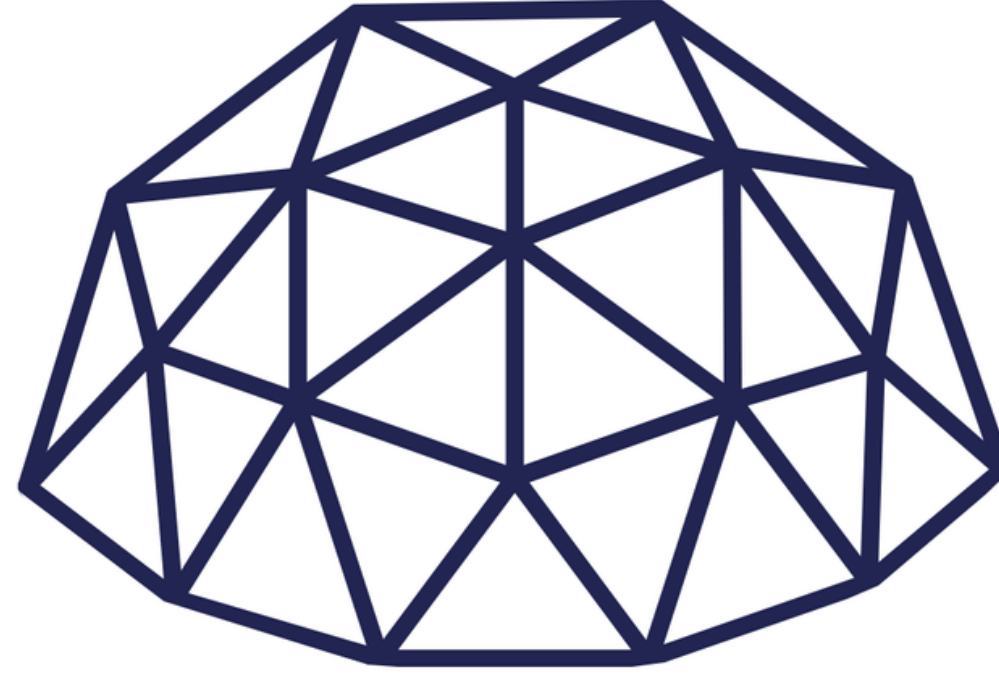
Stellarium shows you a simultaneous simulation of the sky, based on your current location and date/time information. Thanks to the advanced options it provides, it becomes easy for you to find what you want to see.



* Real Time Sky Simulation

References

- **UŞAK Atakule Park**
Türkiye'nin tek örneği 52 metre kulenin üzerine planetarium yapımı gerçekleştirildi.)
- **BURSA Yıldırım Belediyesi**
14 Metre Çapında
- **MARDİN Bilim Sanat Merkezi**
10 Metre Çapında
- **MARDİN Milli Eğitim Müdürlüğü**
4 Metre Çapında
- **ANKARA Yunus Emre Vakfı**
Mobil Planetarium Sistemi
- **ANKARA Yunus Emre Vakfı**
Sabit Planetarium Sistemi
- **MANİSA BİLSEM Planetariumu ve Gözlemevi**
8 Metre Çapında
- **BURSA Nilüfer Belediyesi**
Mobil Planetarium Sistemi 4 metre
- **Bilim Teknoloji Merkezi Bursa**
4 Metre Çapında
- **AKSARAY İsabet Okulları**
Mobil Planetarium Sistemi
- **KONYA İsabet Okulları**
Mobil Planetarium Sistemi
- **KARAMAN İsabet Okulları**
Mobil Planetarium Sistemi
- **BAKÜ İstedatlar Tahsil Kompleksi**
- **BURSA Kültür A.Ş**
- **Uludağ Üniversitesi İlahiyat Fakültesi**
- **Bir Eda Tiyatrosu**
- **BURSA Bilim Ve Teknoloji Merkezi**
- **ADIYAMAN Bilim Ve Sanat Merkezi**
- **FMV Işık Okulları Ispartakule Kampüsü**
- **FMV Işık Okulları Erenköy Kampüsü**
- **ERZİNCAN Bilim ve Sanat Merkezi**
- **Fatma Nuri Erkan Bilim ve Sanat Merkezi > ÜST-ZEM Mozaik Eğitim Kurumları**
- **MALATYA Yeşilyurt Belediyesi**
- **SAMSUN Ses Koleji**
- **UŞAK Belediyesi**
- **UŞAK Valiliği**
- **Eyüpoğlu Okulları**
- **BURSA Yönder Okulları**



CACABEY

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