



MEGASTAR

What is MEGASTAR?

MEGASTAR is a new-generation planetarium system created by Takayuki Ohira at a time when the existing planetariums were able to project stars only up to the 6th and 7th magnitude, or around six to thirty thousand stars. In 1998, during the London IPS Conference, MEGASTAR-I made its debut, showing 100 times more stars than conventional planetariums, showing those stars up to the 11th magnitude – a staggering one million-plus stars. It was a revolution in the planetarium world.

Although indistinguishable to the human eye, the small stars are there, shining in deep space. MEGASTAR's close-to-real projections allow you to view the faint stars like tiny grains of sand, as they form the depth and breadth of the galaxy.

People watching MEGASTAR shows are so touched by the beauty of the skies that they often shed silent tears. Possibly the stars in the vast universe make us instinctively appreciate the fragile life on our planet, as we are awed by the mysteries of our universe.

● Reality in the Starry Skies



True to its name, MEGASTAR will unfold the constellations made up of millions of stars, up to 22 million stars as of May 2010 to be exact. The Milky Way will be viewed, for the first time in the world as huge clusters of stars, not just a hazy band. Using binoculars, as Galileo Galilei did 400 years ago, you will be able to see not only the individual stars of the Milky Way, but you will also discover all of the Messier objects. There are over 140 clusters and nebulae you can view with the help of MEGASTAR.

● Maintenance-Free Operation



The entire MEGASTAR series use ultra-bright LED lamps as light sources, – a first in the planetarium industry. There is no need to change the lamps for over 10 years. Compared with traditional projectors, which use high-voltage discharge lamps, this feature of MEGASTAR is a revolutionary achievement. It is a notably safer and environmentally-friendly device with lower power consumption. Almost all of the rotational electrical components are sealed with precious metallic slip rings, thus eliminating the need to clean or exchange the hard-to-access parts.

● Compact



Our star projectors are surprisingly small, lightweight and of simple design. The projector body does not block any visitor's view nor cast a shadow when used alongside a digital planetarium system. Besides all this, its installation space requirement is small. Some portable models are available for planetarium shows not only in stationary domes, but also in mobile planetarium domes.

Surrounded by the beauty of the skies... Touching the infinity of the universe...

MEGASTAR reminds us of our belonging to the Milky Way Galaxy.



Extra Image Effects



To the beautiful skies created by MEGASTAR, you can add extra celestial objects such as the sun, the moon and the planets by adding supplementary projectors. Another feature is the built-in Autogeometry*, which automatically configures the dome geometry for synchronized projection with digital planetarium systems in hybrid solutions. In hybrid solutions various visual effects are easily integrated with MEGASTAR system, starting with guides and explanations to MEGASTAR sky ending with space flight simulation from earth surface to the edge of the universe.

*Autogeometry

The Autogeometry (patent pending) allows easy and rapid integration, or "auto calibration," between the optical and digital planetariums in hybrid shows. Once thought to be almost impossible hybrid shows in temporary domes are now possible. The projectors are synchronized quickly to correct any misalignment. Furthermore, the star projector need not be in the dome's center.



Relax in a gigantic dome under the magnificent starry skies...



MEGASTAR-IIA

ideal for large domes with diameters of 15-22 meters

MEGASTAR-IIA is the latest in optical planetarium projector development, fit for large domes of up to 22 meters in diameter. To ensure the highest quality projection in large domes, the projector system is divided into 32 lenses. Also, the brightest 40 stars (optionally can be increased to 62) are projected independently each with its own colors and magnitude.

MEGASTAR-IIA is the only planetarium in the world to adopt LED lamp sources for large domes. Along with other MEGASTARs in the series, this technology eliminates the need for lamp exchange, thus delivering the maintenance-free concept of the MEGASTAR series.

The MEGASTAR Full System



The Star Projector installed in the center of the dome, surrounded by the Planets as well as the Sun and Moon Projectors. Their operation is fully computer-controlled, providing accurate system synchronization. The coordinates of the planets, the sun and the moon are calibrated exactly according to time (past, present, future) and location (earth location or arbitrary location within the solar system).

Sun and Moon Projectors



The newly-developed state-of-the-art Sun and Moon Projectors, the Eclipse System, have adopted a completely new concept in digital imaging. It is a huge step forward in the close-to-real imaging technology.

Lunar eclipse • Solar eclipse



The Eclipse System allows you to view a depiction of the moon with detailed surface features. The total lunar and solar eclipse with the corona, the breathtaking diamond ring, the bronzed moon during a lunar eclipse...Enjoy the elaborate presentation of the sun and the moon.



Planet Projectors



Planet projects are computer controlled independent projectors. Using ultrabright LED lamps for vivid images, you are not encumbered by lamp changes. The entire projector is housed in a transparent cover, thus no movable parts are exposed. Planet Projectors are characterized by their reliable long-life designs.



A real sky in mid-size dome

MEGASTAR-IIB

fit for dome diameters of 10-16 meters

Equatorial Sensor



The camera and laser device are used for autogeometry to synchronize with a digital planetarium.

Bright Stars



Each bright star is reproduced with its real color and magnitude with a twinkling feature.

The MEGASTAR-IIB is designed for mid-range domes of 10 to 16 meters in diameter, promising low-cost, easy-to-use projectors ideal for the most common existing mid-size planetariums in the world. However, there is no compromise in its quality; it offers views of the amazing night skies better than ever. MEGASTAR-IIB recreates the staggering 10 million stars and rich star fields, showing up to 140 deep space objects. It is the first planetarium projector of its size to use LEDs as the main light source. With power consumption below 300 watts, it is environmentally friendly. In addition to the adoption of the LED technology eliminating the lamp change requirements, all the rotational electrical contacts are encapsulated in high-quality, long-life sealed slip rings delivering the maintenance-free promise. Just as with MEGASTAR-IIA, IIB can be easily combined with the Sun, Moon and Planet Projectors and, needless to say, can be integrated with digital planetarium systems and it supports Autogeometry. With MEGASTAR-IIB, you can enjoy quality projection comparable to any large dome.

Small dome range, mobility and basketball size

MEGASTAR-ZERO

Ideal for dome diameters of 4.5–11 meters

MEGASTAR -ZERO is the smallest in the series, yet it provides powerful functionality and is a revolutionary device in the optical planetarium world. It was first introduced during the IPS Conference 2006 in Melbourne, Australia. Often compared to a basketball, this compact projector offers a powerful optical planetarium and was the first to adopt an LED light source in the planetarium industry. MEGASTAR-ZERO, changed the concept of the planetarium experience.

Despite its compact size, the ZERO accommodates domes up to mid-range, 11-meter-diameter domes. It produces up to two million stars. The Milky Way is not a hazy blob but rather appears as clusters of separate, individual stars. It is proud to hold the name of MEGASTAR, delivering all the quality and functionality provided by the series. Just sit back and enjoy the beautiful sky.

You can, of course, integrate ZERO with digital planetariums. Also, thanks to its compatibility and portability, ZERO has the widest and most versatile applications both in commercial use and in the entertainment and educational sectors.



Mobile planetarium installations



When used with mobile dome, shows can be held anywhere. Would you like to join the planetarium caravan with MEGASTAR-ZERO?

Planetarium installations



Easily integrated with digital systems, most various effects can be performed for educational purposes in science museums.

Restaurants or commercial installations



It came to answer the dream of bringing the real stars into entertainment facilities. Also, the elegant design of the starball adds a special element to the interior.

《Takayuki Ohira - Profile》

- 1970 Born in Kawasaki, Japan
- 1980 age:10 Made desktop pinhole planetarium.
- 1991 age:21 As an amateur, created an optical lens projection planetarium, ASTROLINER.
- 1998 age:28 Demonstrated MEGASTAR at IPS in London with 1.5 million stars.
- 2000 age:30 MEGASTAR was unveiled to the public in the famous Spiral Building (Omotesando) in Tokyo.
- 2003 age:33 MEGASTAR-II demonstration in a former GOTO planetarium building.
- 2004 age:34 MEGASTAR-II Phoenix installed in Kawasaki Municipal Science Museum for Youth.
MEGASTAR-II Cosmos developed and installed in cooperation with The National Museum of Emerging Science and Innovation.
- 2005 age:35 Established Ohira Tech Ltd.
- 2008 age:38 Demonstrated SUPER MEGASTAR-II with world highest number of stars (22 million) during IPS Chicago.
- 2009 age:39 Design of permanent installation model for mid-size domes - MEGASTAR-IIB
- 2010 age:40 Design of permanent installation model for large domes - MEGASTAR-IIA

Takayuki Ohira demonstrated MEGASTAR projectors all around Japan travelling and performing with famous artists like Yumi Matsutoya, SINSKE, musical groups like Bump of Chicken, Nanamusic. He also developed the HOMESTAR home planetarium with SegaToys, My Star with Gakken. He was filmed in Nescafe TV commercial. Takayuki Ohira is the author of the book "I made a planetarium" which was made into TV drama by Fuji Television.

Awards: Nihon University best award, Azalea Award, BVLGARI dream world 2006, Japan Innovator Grand Prix (Nikkei BP), Special award from the Minister of Education.



<Science & Art & Entertainment>

Why are we so moved when we look up at the magnificent star-filled skies? Something really happens in our hearts. Why do the stars have such power over us? When MEGASTAR recreates the night skies, accurately simulating the real skies based on the latest astronomical data and contemporary sciences, it is more than merely science. These recreations are works of art that capture our minds. The mysteries of the heavens and Earth, the mystery of our gods...they somehow work deep down in our genes. They have a hidden power.

The compact and portable MEGASTAR delivers the night skies anywhere you like. It is science, art and entertainment. It is expanding into various shows like weddings, music concerts, art galleries and an assortment of other events. MEGASTAR shows have powers far beyond any ordinary planetarium. MEGASTAR reaches deep down in your heart directly, stirring up your emotions and memories of our remote past. Enjoy the experience!



Specifications

Type	MEGASTAR-IIA	MEGASTAR-IIB	MEGASTAR-II-ZERO	
Star Projector	Dome Diameter Range	15~22m flat/tilt dome	10~16m flat dome	4.5~11m flat/portable dome
	Number of Stars	1 million ~ 20 million	100 thousands ~ 10 million	100 thousands ~ 5 million
	Clusters & Nebulae	over 170	over 140	over 50
	Projection Type	32 optical projection units	12 optical projection units	4 optical projection units
	Light Source	Ultra bright LED light source(lamp life expectancy 30.000 hours)		
	Dimming	Electronic control(PWM) 0-100%		
	Shutter	External shutter/Electronic shutter	Gravity shutter	
	Motion	Time motion:Diurnal, Annual, Precession. Location motion:Longitude, Latitude (Full sphere). Option: Extraterrestrial position		
	Axis Speed	Each axis 0~40deg/sec		Each axis 0~20deg/sec
	Cooling	4 built in fans		Fanless
	Bright Stars	21~62	21~40	None
	Auto Geometry	CCD camera, laser pointing system (digital planetarium dome geometry and calibration settings)		
	Size	816(w)×600(d)×934(h)	670(w)×540(d)×720(h)	330(w)×297(d)×405(h)
	Weight	80kg	45kg	11kg
Star Field Variation	None	Replacing head	None	
Planet Projector	Shape	Shield shape, independent XY computer controlled projectors		
	Light Source	Ultra bright LED		
	Cooling	Natural (Fanless)		
Sun, Moon Projector	Shape	Independent XY computer controlled projectors	Preset Type (Sun only)	
	Light Source	Extra high pressure mercury vapor lamp	Ultra bright LED	
	Projected Images	Brightness variation, visible diameter variation, surface features, eclipses, Moon phases, planet transitions		
Control	Console PC	WINDOWS-GUI		
	Manual Operation	Dials/faders independent parameters control: time(diurnal, annula, precession) /location (longitude, latitude) /axes control (diurnal axis, latitude axis, azimuth axis) /spacial angles (Pitch, Yaw, Roll) /Individual object brightness /Dome Illuminations control		
	Control Interface	DMX-512(Manula control, Light dimmig)		
	Operation Modes	Manual mode, Auto mode		
	Time Code Sync	Available(SMPTE input voice timde code)		
Other	Power Supply	100V-120VAC 47-63Hz		
	Consumption	1.5kw	500w	200w
	Safety Features	Emergency safety switch (All devices hardware switch)		

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