

CHIRON III - GOTO HYBRID PLANETARIUM®

Compact, LED, opto-mechanical planetarium

16~30m

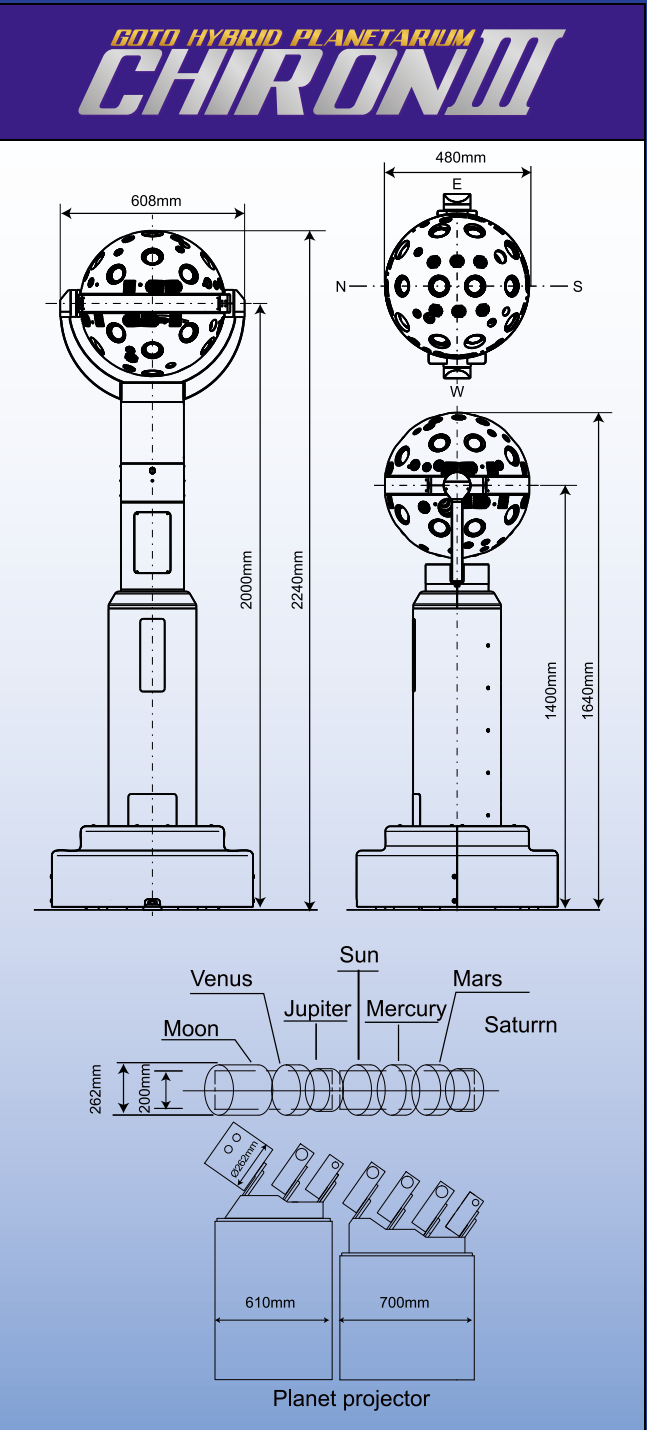


Scope	Dome Type	Horizontal/Tilted Dome
	Dome Diameter	16-30 meters (52-98 feet)
	Standard Seating	150-500 seats (unidirectional or concentric)
Main Star Projector		Optical Projection Type , single starball
		100% full sky with no obstructions
Star Lamp Type		Long-life, high output LEDs. Lifetime 30,000 hour. Depending on type of use and duty cycle Color Temperature 5000°K and 299 stars showing appropriate colors are standard. Option : All 9,500 stars may be grouped by color temperatures or by brightness (in half-magnitude steps). Then each group can be switched or dimmed independently of the others.
Number of Stars		Approx. 9,500 stars down to mag 6.55
Projection type		12 optical projection tubes using fiber optics
Bright Stars		27 - combination of separate LED projector tubes and special treatment of fixed star plates, all with appropriate colors shown Max. star diameter: none greater than 3 arc min.
Scintillation		All stars or fixed stars and bright stars independently. Any variable speed and depth possible.
Deep Sky Objects		More than 337 including all Messier objects
Milky Way		Reproduced as 100,000,000 micro stars on independently dimmable projectors
Main Body Motions		3-Axis, High-speed, High-accuracy motors Latitude/Diurnal/Azimuth 6RPM max.
		Annual - (for optional sun/moon/planets and Plus-V projector) up to 60 sec./year in continuous mode, or "jump" to any time or date in 10 sec. or less
Maintenance		Ten year maintenance cycle for most slip rings
		Low cost maintenance contracts available
		Factory trained technicians in USA, Europe, Asia
Weight		Projector: 120 kg, Power box: 30 kg
Size		Starball diameter: 480mm (19 inches)
Power Consumption		90-230VAC, 50/60Hz, 2.0KVA max

OPTION PACKAGES

A	Moving Object Projectors	Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn
		Long-life, high output LED illumination
		All are computer driven by rapid X-Y slewing mirrors
		Alternate modes such as Orrery, Orbiting Earth
		Satellite, Moons of Jupiter, and others
		Moon shows precise phasing and surface features
		Independent object projectors mount off the main starball
B	Plus-V projector	Sun and moon are shown 1° in size unless requested smaller.
		All planets show realistic coloration
		Speed - (for optional sun/moon/planets) up to 60 sec./year in continuous mode, or "jump" to any time or date in 10 sec. or less
C	Elevators	• 600 mm Telescoping Neck Lift (125kg) • 1,800mm Double Scissors Lift for use with floor pit (1,300 kg)
D	Console Desk	GOTO's steel desk to accept the control panels of the CHIRON III HYBRID

* All specifications subject to change without notice.



GOTO
HYBRID
Technology

Origins of CHIRON

CHIRON, the son of CHRONOS, was the wise half-man half-horse creature of the Centaur tribe in Greek mythology. Despite being a hybrid (half-man half-horse), Chiron learned much from the gods and passed his knowledge on to heroes in mythology. GOTO names this new product CHIRON with a wish that your visitors will also learn a lot while at your planetarium. It is pronounced "Kee-ron" in Latin, or "Kai-ron" in American English.

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* Printed December, 2020



GOTO INC

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Introducing the CHIRON III HYBRID Planetarium from GOTO INC

Maximum Performance – Minimum Size

GOTO INC, the company bringing innovation after innovation to the planetarium world for more than a half century, now brings forth another quantum leap in technology. With the CHIRON III, planetarium audiences can for the first time see the sky in a totally new light!



Fuchu City Local Forest Museum



Osaki Lifelong Educational Center

Bring big excitement to your dome in a very small package.

A small package with a powerful punch!

The CHIRON III is the smallest we have ever produced for 16-30 meter domes. The starball is only 482mm (19 inches) in diameter! Using a new, proprietary, fiber optic technique and powerful, state of the art, energy-saving, long-life LEDs, GOTO is able to produce a star field with even the brightest stars no more than 3 arc minutes in size. These are the smallest star images GOTO INC has ever made. And the vast majority of stars, such as the 100,000,000 individual micro-star images shown in the Milky Way are smaller than 1 arc second!

Famous GOTO HYBRID Control

CHIRON III joins the family of other GOTO opto-mechanical projectors which utilize the same GOTO HYBRID control panels. More than 200 switches, sliders, and analog knobs allow the user to quickly and easily trigger a myriad of opto-mechanical functions, full-dome video projections, and synchronized HYBRID displays. This is the way to do live shows without tedious pre-scripting or long pauses while an operator tries to sift through computer menus to find a control. The GOTO HYBRID panels do what the operator wants to do, at the simple touch of a button.



Digital Shutters

The CHIRON III uses GOTO's proven digital shutters for horizon cutoff of stars. Since the cutoff blade is motorized and driven by a computer, the angle and height of the shutter can be controlled in flat or tilted domes. Raise the horizon above panorama scenes to avoid "stars through the mountain", or use the shutters to make dramatic sweeps of the sky as a special effect, or lower all of the shutters to bathe the audience in stars. It's all at your control.

Near-zero Maintenance

GOTO INC continues to incorporate new-age materials which cut maintenance to a minimum. Slip rings, the traditional bane of opto-mechanical projectors, now use totally new metal alloys which eliminate the majority of cleaning and replacement of contact points. Periodic dusting and a single annual maintenance visit from a GOTO factory-trained technician is all that is needed to keep this machine running smoothly for decades to come. There are no light bulbs to burn out, and cooler LEDs are friendly toward lubricants, motors, and moving parts. You can significantly reduce maintenance and operating costs with the CHIRON III.

True Scintillation

As earlier planetariums also did, CHIRON III allows the user to "peel off the atmosphere" to show the stars as steady, unwavering points of light. But now, GOTO's exclusive scintillation system can be switched on to show the most realistic twinkling ever seen indoors. We challenge anyone to notice any repeating pattern in the scintillations created by our computer's real-time random number generator!

Variable Stars

9 variable stars are included, and an additional 27 stars can be switched on/off independently to simulate supernovae, etc. Use this feature in astronomy lab classes to learn about these particular stars.

OPTIONAL EQUIPMENT Add to the CHIRON III - Add to the Excitement

While the basic CHIRON III is a quantum leap up compared to earlier planetarium projectors, several new options can be added to make it an even more attractive component of a GOTO HYBRID Planetarium™.

Truly Unique Star Field Controls

The CHIRON III now offers two unique options for control of the starry sky. The newest option allows the user to control stars according to their brightness, grouped in half-magnitude steps. So to simulate a light polluted, big city sky, one might only turn on stars brighter than mag 3.5, while all stars down to mag 5.0 may be more realistic for a village sky, or turn on all 9,500 stars down to 6.55 to show the sky as seen from atop Mauna Kea! Or, you can optionally choose the ability to have all the sky's stars grouped by color temperature, so that the operator can switch on or off for instance, all the red stars, or the blue ones, or show only the yellow ones, or... you decide!

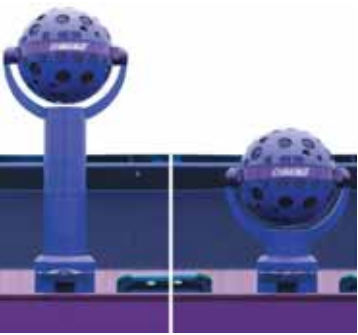
Sun, Moon, and Planet Projectors

With the CHIRON III's new, much smaller size also comes newly redesigned moving object projectors. These compact projectors are mounted in front of the starball, and move the sun, moon, and planets swiftly and accurately to their proper positions. Images are very bright, so your audiences will call out, "What's that?" when Venus rises, just as they do under the real sky. You won't have to make excuses for dim, fuzzy, blobs which are supposed to represent planets. Now you can have planets with real character, a sun which casts shadows in the room, and a moon that is dazzling to the eye. This is the sky as you have never seen it in a planetarium before!



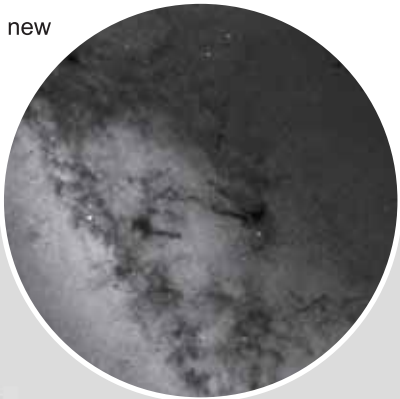
Integrated Elevator

The supporting neck of the CHIRON III can be fitted with an optional, telescoping 60cm lift. So you can lower the CHIRON III to avoid any shadowing from cove-mounted video projectors, or raise it for absolute accuracy of HYBRID motions.



Milky Way

The 100-million micro-stars in the Milky Way can be controlled in brightness, independently from general star brightness, to have as much or as little visibility as you desire. The MilkyWay contains more than 300 deep sky objects, including galaxies, emission nebulae, star clusters, dark dust clouds, superbly realistic Magellanic Clouds, and much more. Bring your binoculars!



Plus-V Special Object Projector

GOTO is proud to announce a very special new optional projector, the Plus-V projector. For decades, GOTO has offered a "Plus-1" projector - a planet-style dot which could be moved around the dome at will to represent a satellite, a comet's location, or other object.

But now, the new Plus-V projector projects a video image that can do so much more than a simple dot! Use the Plus-V as a video sun projector which can turn orange and red at sunset, or have a transit of Venus visible in your dome. Solar eclipses are dramatic and can be zoomed larger. A comet drifts across the sky. A bolide blazes toward the earth. Or an asteroid tumbles as it moves through space. Your imagination is the only limit on what the Plus-V can show. The image is HD, high contrast, and very bright. You decide what it will show!

GOTO HYBRID
The Best Gets Better