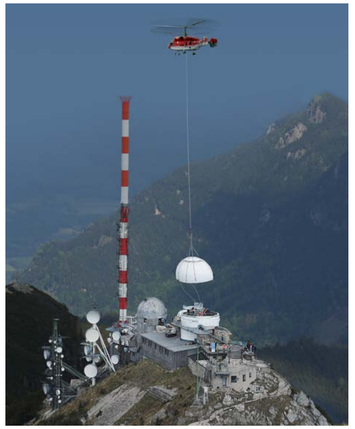
BAADER DOMES

50 YEARS OF EXPERIENCE

1. 3,2 m Slit Dome for Meteoswiss, Mt. Jungfraujoch / Switzerland
2. 8,5 m Slit Dome for LMU University, Mt. Wendelstein / Germany
3. 4,5 m AllSky + 5,3 m & 2x 6,15 m Slit Dome for University of Bern, Switzerland
4. 3,2 m Slit Dome for AWI, Svalbard
5. 8,5 m Slit Dome for FORTH, Mt. Skinakas / Greece

Installation of 8,5 m Slit Dome on Mt. Wendelstein, Germany



REFERENCES

SLR / SSA / LASERCOM

NASA | ESA – European Space Agency | Airbus Defence and Space | DLR – Deutsches Zentrum für Luft- und Raumfahrt | SSC – Swedish Space Corporation | MPE – Max-Planck-Institut für extraterrestrische Physik | RIKEN Center for Advanced Photonics (RAP) | DIGOS – Laser Ranging for Satellites | BKG – Bundesamt für Kartographie und Geodäsie | ÖAW – Österreichische Akademie der Wissenschaften | GFZ – Helmholtz-Zentrum Potsdam | KIT-Campus Alpin: Atmospharische Umweltforschung | Dalhousie University | IUP – Institut für Umweltphysik Bremen NLS – Finnish Geospatial Research Institut FGI

SCIENCE & RESEARCH

The Open University | DWD – Deutscher Wetterdienst | AWI – Alfred Wegener Institut | MPA – Max-Planck-Institut für Astronomie | MPP – Max-Planck-Institut für Physik | MPI – Max-Planck-Institut für Informatik | ZEISS | AIP – Leipnitz-Institut für Astrophysik Potsdam | FORTH – Foundation of research and technology Hellas | ESO – Europäische Südsternwarte | Sharjah Center for Astronomy and Space Sciences | KIS – Kiepenheuer-Institut für Sonnenphysik | Solaris – Nicolaus Copernicus Astronomical Center | Institut für Astrophysik Göttingen | MeteoSwiss

EDUCATION

Universität Bern | LMU – Ludwig-Maximilians- Universität München | University of Kent | EGN – Einstein Gymnasium Neuenhagen | IAC – Instituto Astrofisica Canarias | Eberhard Karls Universität Tübingen | Arnoldschule Gotha – Staatliches Gymnasium | Kepler Gymnasium | vhsrt – Volkshochschule Reutlingen | Universität Hamburg | phaenovum – Staernwarte Gersbach | JSG – Rheinische Friedrich Wilhelms Universität Bonn | Leonardo DaVinci Campus | Universitat de Barcelona | LGL – Lessing Gymnasium Lampertheim | Gymnasium Penzberg | Kopernikusschule Freigericht | SGM – Staffelsee Gymnasium Murnau | Gymnasium Balingen | Hamar Cathedral School

PUBLIC

experimenta – Das Science Center | Haus der Natur – VEGA Sternwarte | ATHOS – Centro Astronomico Isla de la Palma Canarias | Sternwarte Welzheim | Sternwarte Zollern-Alb | Sternwarte Lübeck | Volkssternwarte München | SWRT – Sternwarte und Planetarium Reutlingen | TLS – Thüringer Landessternwarte | Sternwarte Drebach

INTRODUCTION

WHY BAADER PLANETARIUM DOMES

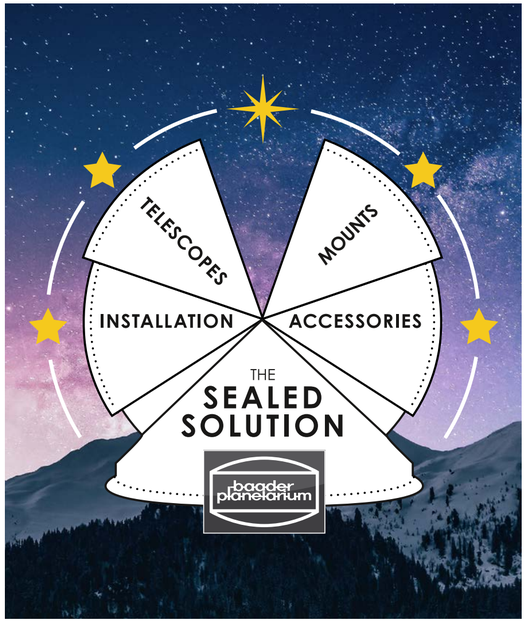
Baader Planetarium is a middle sized enterprise having over 50 years experience producing and installing astronomical equipment and turn-key observatory solutions.

The key capability is the production of high-end domes.

More than 600 observatory domes of sizes from 2.1 m up to 8.5 m have been installed, together with a large number of projection domes for planetariums that are up to 10m in diameter. Observatory domes can be utilized for multiple applications around the world and we also specialize in solutions that work in harsh environments. Some of which can be found in Antarctica (Dome C -84°C), high Arctic regions such as Svalbard (NyÅlesund -45°C), Ellesmere Island (Eureka -60°C), in desert conditions with hermetic seals against dust, and a number of high mountain locations.

Our customers are institutions, universities, observatories and companies around the world, amongst them:

- NASA (National Aeronautics and Space Administration)
- AWI (Alfred Wegener Institute for polar research)
- MPI (Max Planck Institution)
- University of Hamburg (PIST-Project Mallorca)
- Open University UK (PIRATECOAST Project Tenerife)
- ESO (European Souther Observatory)
- NLS (Finnish Geospacial Reserarch Institute)
- FORTH Skinakas Observatory Crete
- LMU (Ludwig Maximilian University Munich): Mt. Wendelstein Observatory
- SCASS (Sharjah Center for Astronomy & Space Sciences)
- IAC (Canary Islands)
- RAP (RIKEN Center for Advanced Photonics)
- DLR (Deutsches Zentrum für Luft- und Raumfahrt e.V.)
- AIRBUS Group



BAADER PLANETARIUM

ABOUT US

Baader Planetarium provides the tools to teach and enable people to explore the universe we live in.

OUR VALUE PROPOSITION

- We offer the most reliable **Domes** in the market which survive the harshest environmental conditions.
- We provide **Turn-Key Observatory Solutions** by integrating observatory equipment to function as a system utilizing in-house developed and customized products and software.
- Customers can rely on fast shipment of requested **Astronomical Consumer Products** along with support.

HISTORY

Our company started in 1966 with the first product being the Baader Planetarium which also became our name. Since then, we continued to expand by offering domes that would protect telescopes for astronomers in different environments around the world. We also realized the need of further educating and providing the right equipment for our customers needs, hence, we developed a variety of accessories to adapt all the components required to install complete observatories.

The observatory domes we produce and the high end telescopes and mounts from the brands we sell are also in demand from the space industry. We combine these devices to fully integrated turn-key ground stations for satellite tracking, laser communication and space debris tracking and install them everywhere in the world.

>600
OBSERVATORIES

50+
YEARS EXPERIENCE

3.560m
TALLEST MOUNTAIN

300 km/h
HIGHEST WIND LOAD

-86°
COLDEST TEMPERATURE

Ø 2,1 – 8,5 m

BAADER SLIT DOMES

INTRODUCTION

BAADER SLIT DOMES

Observatory domes with broad up- and over-shutter and that can be controlled remotely, sized from 2.1 to 8.5 meters in diameter. They can be in sync with your remote / robotic telescope setup, with endless rotation, horizontal flap movement, and are fully ASCOM and INDIGO compatible – or via dedicated API.

CLASSIC SLIT DOMES

Baader's Classic Domes are typically used by private individuals and they can be operated manually or with a motorized sub-system controlled via a hand controller or remotely. These are typically used for smaller telescope setups that have up to a 600mm aperture.

Applications:

- Astronomy
- Astrophotography

Sizes:

- 2.1m, 2.6m, 3.2m

ADVANCED SLIT DOMES

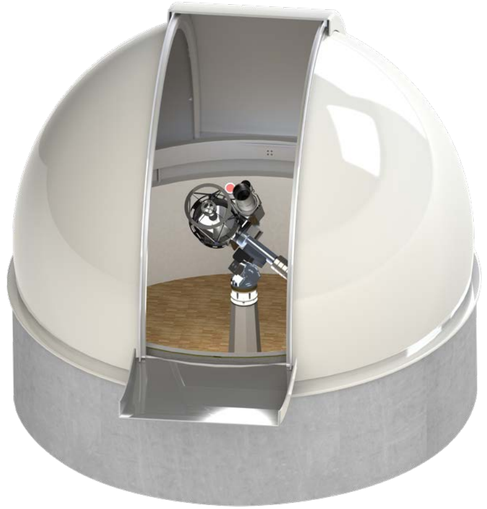
Advanced Slit Domes are used by a variety of users and can fit medium to large telescope setups that have up to 2000 mm aperture.

Applications:

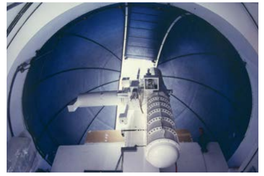
- Astronomy / Astrophotography
- Satellite Laser Ranging (SLR)
- Space Domain Awareness (SDA)
- Free-Space Optical Communication (FSOC)
- Defense

Sizes:

- 3.2m, 4.2m, 5.3m, 6.15m, 8.5m



KIT-Campus, Mt. Zugspitze – 2.6 m Dome



Gregory Telescope, Tenerife– 8.0 m Dome

University Neuenhagen, Germany – 3.2 m Dome

NASA, Greenbelt (USA) – 4.2m Highspeed Dome

ALL BAADER SLIT DOME MODELS INCLUDE:

Installation	Performed by Baader personnel at the customer site
Warranty	2 years warranty for all electronic and electric components
	10 years warranty for outer dome skin and dome mechanics
	We warrant for 200km/h wind speed (Advanced: 250km/h) to achieve undeteriorated performance and protection of the dome interior, with the dome being closed and in parking position
Fail-safe Features	Hand crank system to close dome in case of power failure
	Ready for Emergency Weather Station

LEGEND (all measurements in mm):

A	Dome outer diameter	**E**	Required concrete dome foundation
B	Outer zenital dome height above foundation	**F**	Unobstructed telescope moving radius from geometrical dome center (●)
C*	Lowest clear horizon (spring line)	**G**	Cylindrical base height
D	Clear slit aperture		

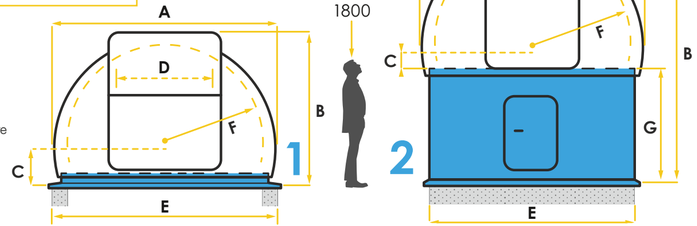
* **Attention:** Spring line height (**C**) varies according to selected advanced features.

MEASUREMENTS

REQUIRED FOR ALL BAADER SLIT DOMES:

Either short cylinder (1) OR cylindrical base (2)

The short cylinder is the interface between the dome and the structure is it to be installed on. The cylindrical base is another option that can be incorporated to maximize the interior of an observatory.



Deutsches Museum, Munich – 3.2 m Dome

Zollern-Alp, Germany – 2x 4.2 m + 6.15 m Dome

Private Observatory, Germany – 3.2 m Dome

ChazDuraz Observatory, Italy – 2.6 m Dome

SPECIFICATIONS

BAADER SLIT DOMES

STRUCTURE

Built as a self-contained structure made of Fiberglass Reinforced Polyester (FRP) with dual slit arches that is mounted on a precision laser cut steel ring, an up and over shutter, and a horizontal flap.

ENDLESS DOME ROTATION

Supplied with a Continuous Power Bar (CPB) enabling endless dome rotation and permanent remote control of the shutter and horizontal flap.

ENVIRONMENTAL & VARMINT PROTECTION

Protecting your system is critical for the functionality and longevity of the housed equipment, hence, silicone seals are used to mitigate the entry of unwanted particles and varmint.

AUTOMATED DOME CONTROL

An electronical controller with an interface that enables the end-user to control the dome locally with a hand control unit and remotely via direct drivers, API, ASCOM or INDIGO.

INNER SURFACE

The inner surface of the dome is coated with a non-reflective paint to mitigate stray light from affecting data collection and avoid hotspots to form during daytime operation.

EMERGENCY WEATHER STATION

A component that is hardwired to the control sub-system which commands the dome to close in case of precipitation or high wind speeds.

BAADER SLIT DOMES

OPTIONAL UPGRADES

HIGHSPEED DOME ROTATION

For advanced applications that require high speed tracking, this geared toothed wheel drive with high dynamic motors enables dome rotation speeds of up to 35°/second.

SOLAR SHIELD

For daytime operations, the roll-up shutter lessens solar radiation and thermal hot spots to form inside the dome.

PROFESSIONAL WEATHER STATION

If additional environmental situational awareness is desired for the observatory, a weather station that includes multiple sensors for weather data monitoring and logging.

ADVANCED PERFORMANCE UPGRADES

Structural upgrades and additional equipment can be added for the dome and equipment to survive environmental conditions with temperatures down to -60° C, wind loads of up to 300 km/h, and sites that are prone to lightning strikes.

CUSTOM MODIFICATIONS

For customers that desire mechanical through-holes with flanges and holders for electronic equipment.

UNINTERRUPTED POWER SUPPLY

Another fail-safe feature that is incorporated and only utilized for the dome to ensure self-closure in case there is a power failure.

DOME INTERIOR LIGHTING

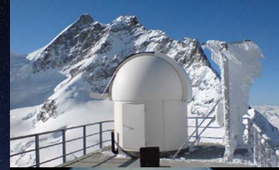
Downward-radiating wall lights can be provided in red and white light which can be separately controllable and dimmable.

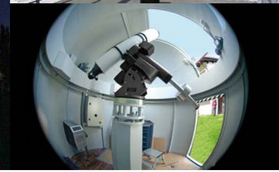
LOCAL SITUATIONAL AWARENESS

An indoor and outdoor camera can be supplied to provide awareness of the status of your observatory.

AIR DRYING SYSTEM

Depending on your site's location, an air dehumidifier is recommended to control moisture levels and create overpressure inside the dome.

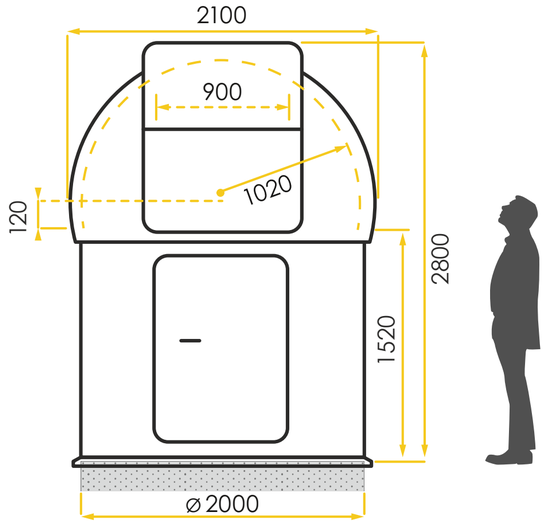




⌀ 2,1 m

CLASSIC SLIT DOME

Weight with short cylinder	~ 300 kg
Weight with Cylindrical Base	~ 400 kg
Rec. Telescope Aperture	up to 300 mm
Power Parameters	230 V / 3 kW



PRIVATE OBSERVATORY, GERMANY

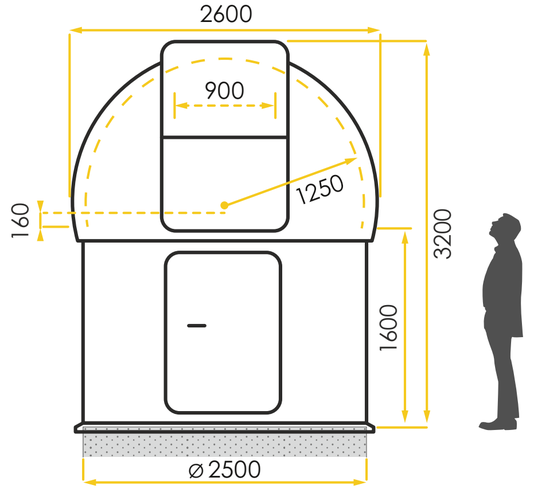
The Baader observatory dome seems indestructible and defies all wind and weather. It must be, because it is part of my house roof. I appreciate the convenience of having my instruments quickly ready for observation. The light and wind protection the dome provides is another plus.

Dr. Reinhard Krömmelbein

⌀ 2,6 m

CLASSIC SLIT DOME

Weight with short cylinder	~ 500 kg
Weight with Cylindrical Base	~ 620 kg
Rec. Telescope Aperture	up to 450 mm
Power Parameters	230 V / 3.75 kW



PRIVATE OBSERVATORY, SWITZERLAND

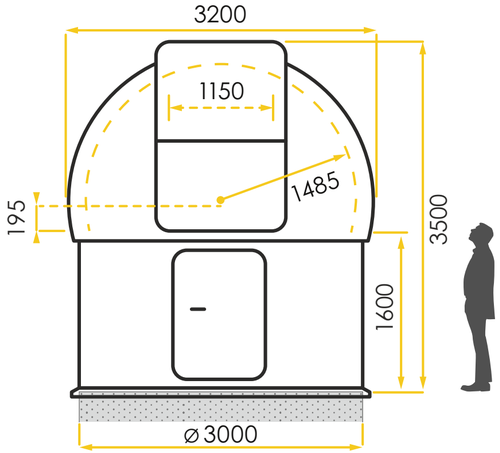
18 years from purchase I can say that the dome is mainly maintenance free. I never had any leak of rain or even snow. What I appreciate most is its thermal stability. Dome closed, the internal temperature follows the external temperature with no more than 1°C difference.

Nicolas Soldati
SoldatiSpace Observatory

ø 3,2 m

CLASSIC / ADVANCED SLIT DOME

Weight with short cylinder	~ 750 kg
Weight with Cylindrical Base	~ 920 kg
Rec. Telescope Aperture	up to 600 mm
Power Parameters Classic	230 V / 4.5 kW
Power Parameters Advanced	400 V 3ph / 9 kW



KOLDEWEY-STATION, SVALBARD

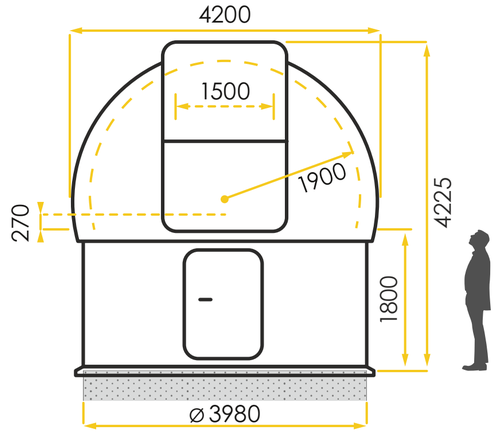
The dome has been functioning perfectly for 17 years now with minimal maintenance, which can be done by our own engineers. The extreme meteorological conditions, especially in the polar winter, which are comparable to those in the high mountains, have not restricted routine operation.

Dr. Christoph Ritter
AWI Foundation for Polar and Marine Research

ø 4,2 m

ADVANCED SLIT DOME

Weight with short cylinder	~ 1.300 kg
Weight with Cylindrical Base	~ 1.700 kg
Rec. Telescope Aperture	up to 700 mm
Power Parameters	400 V 3ph / 10kW *(230V also available)*



MT. ZUGSPITZE, GERMANY

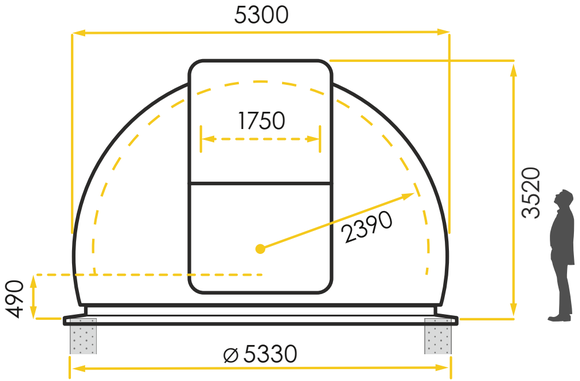
The Schneefernerhaus at 2650 m above sea level is the highest environmental research station in Germany. For our research we have acquired two domes from Baader Planetarium to protect the highly sensitive measuring instruments from the harsh environmental conditions on the Mt. Zugspitze.

Dr. Ralf Sussmann
KIT Karlsruher Institute for Technology

ø 5,3 m

ADVANCED SLIT DOME

Weight with short cylinder	~ 2.000 kg
Weight with Cylindrical Base	~ 2.700 kg
Rec. Telescope Aperture	up to 1000 mm
Power Parameters	400 V 3ph / 13kW



METSÄHOVI, FINNLAND

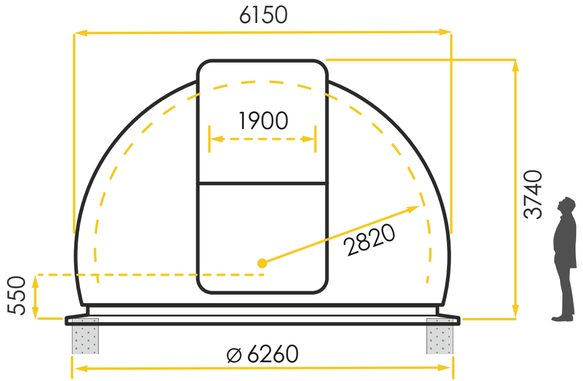
The construction of the dome is very sturdy. It can easily handle all conceivable snow and ice loads. We can even use the shutter to lift ~150kg objects inside the dome. The mechanical and electrical components are of the highest build quality.

Jyri Näränen, PhD
NLS – Finnish Geospatial Research Institute

ø 6,15 m

ADVANCED SLIT DOME

Weight with short cylinder	~ 4000 kg
Rec. Telescope Aperture	up to 1500 mm
Power Parameters	400 V 3ph / 20kW



ZOLLERN-ALB, GERMANY

Our 6.15m and 2x 4.2m Baader domes have been serving us excellently for 15 years now through every weather and circumstances. Despite intensive sunlight in summer, all 3 domes always stay pleasantly cool – a clear sign of the excellent (!!) insulation.

Rolf Blitzer
Zollern-Alb Observatory

ø 8,5 m

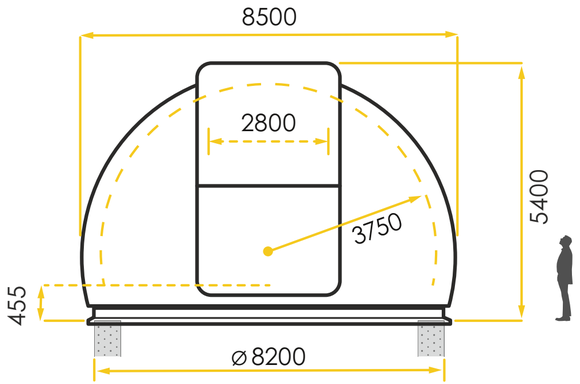
ADVANCED SLIT DOME

Weight with short cylinder	~ 9.000 kg
Rec. Telescope Aperture	up to 1.500 mm
Power Parameters	400 V 3ph / 25kW

MT. SKINAKAS, GREECE

Our 3m and 8m domes have successfully withstood the extreme winter weather conditions on top of Skinakas mountain (e.g. wind speeds up to 250 km/hr, frequent lightening, ice and low temperature, down to -15° C), and have protected our valuable scientific equipment.

Prof. Yannis Papamastorakis
FORTH – Foundation for Research and Technology



BAADER SLIT DOMES

OVERVIEW

		CLASSIC SLIT DOMES			ADVANCED SLIT DOMES				
Ø Dome Size		**2,1 m**	**2,6 m**	**3,2 m**	**3,2 m**	**4,2 m**	**5,3 m**	**6,15 m**	**8,5 m**
Recommended telescope aperture		up to 320 mm	up to 450 mm	up to 600 mm	up to 600 mm	up to 700 mm	up to 1000 mm	up to 1500 mm	up to 2000 mm
Total Mass (including either base options)	**Short Cylin.**	up to 300 kg	up to 500 kg	up to 750 kg	up to 750 kg	up to 1.300 kg	up to 2.000 kg	up to 4.000 kg	up to 9.000 kg
	Long Cylin.	up to 400 kg	up to 620 kg	up to 920 kg	up to 920 kg	up to 1.700 kg	up to 2.700 kg		
Power Parameters	**Voltage**	230 V	230 V	230 V	400 V 3ph	400 V 3ph	400 V 3ph	400 V 3ph	400 V 3ph
	Max. Peak	3 kW	3.75 kW	4.5 kW	9 kW	10 kW	13 kW	20 kW	25 kW
Rotation Rate(s)	**Standard**	Up to 10° / s							
	Highspeed				Up to 35° / s		Up to 30° / s		Up to 20° / s
Flap and shutter open & closing time(s)	**Standard**	60 s				90 s	120 s	180 s	360 s
	Highspeed				30 s		40 s		60 s
Advanced Application Upgrades					High Speed Dome Rotation, Solar Shield, Fixed Aperture with Baffle				
Material		Fiber Reinforced Polyester (FRP)							
Survivable Wind Speed	**Standard**	up to 200 km/h,							
	Upgrade	High-alpine and other extreme environments: up to 300 km/h							
Operational Wind Speed		up to 70 km/h							
Survivable & Operational Temperature Range	**Standard**	-20°C to +40°C							
	Upgrade	Extended range from -60°C to +50°C with Climatic Performance Upgrades							
Required RCD		300mA Residual Current Device (RCD)							
Command & Control		Manual, Hand Controller, RS232 and TCP/IP							
Communication Protocol		Proprietary API, ASCOM, INDIGO							
Mandatory Base Options		Short Cylinder (Wall Adapter) OR Cylindrical Base with Entrance Door						Short Cylinder (Wall Adapter)	
Upgrades available upon requests		Absolute Encoders, Uninterrupted Power Supply, Professional Weather Station, Climatic Perfomance Upgrades, Custom Modifications / Mounting Points, Lightning Mitigation							

ø 2,3 – 6,5 m

BAADER ALLSKY DOMES

INTRODUCTION

BAADER ALLSKY DOMES

These domes provide a 180° full sky view with maximum interior space that can be controlled remotely, including automated operation capabilities. Each segment can move independently for optimized wind and light protection. AllSky domes come with a permanently accessible entrance door and an auto-close feature dependent on the feedback provided by the emergency weather station.

ALLSKY DOMES

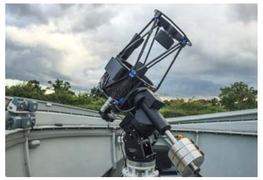
Applications:

- Astronomy / Astrophotography
- Space Situational Awareness (SSA) / Space Domain Awareness (SDA)
- Free-Space Optical Communication (FSOC)
- Athmospheric and other detectors
- Defense

Sizes:

- 2.3 m, 3.5 m, 4.5 m, 6.5 m

Public Event, Munich – 3,5m AllSky Dome



Kent, UK – 3.5 m AllSky Dome

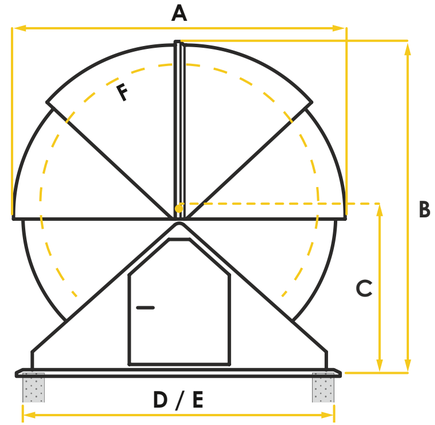
Argentinia – 3.5 m AllSky Dome

Dome C, Antarctica – 4.5 m AllSky Dome

ALL BAADER ALLSKY DOME MODELS INCLUDE:

Installation	Performed by Baader personnel at the customer site
Warranty	2 years warranty for all electronic and electric components
	10 years warranty for outer dome skin and dome mechanics
	We warrant for 200km/h wind speed to achieve undeteriorated performance and protection of the dome interior, with the dome being closed
Fail-safe Features	Power drill with system interfaces to close dome in case of power failure
	Emergency Weather Station (mandatory)

MEASUREMENTS

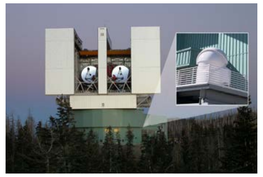


LEGEND (all given measurements in mm):

A	Largest dome outer diameter	**D**	Required (oblong) concrete dome foundation width
B	Outer zenital dome height above foundation	**E**	Required (oblong) concrete dome foundation length
C	Lowest clear horizon (spring line)	**F**	Unobstructed inner sphere (max. telescope moving sphere from geometrical dome center [●])

experimenta, Germany – 6.5 m AllSky Dome

SSC Space, Australia – 3.5m AllSky Dome



LBTO, Arizona (USA) – 2.3 m AllSky Dome

DLR, South Africa – 3.5 m AllSky Dome

SPECIFICATIONS

BAADER ALLSKY DOMES

SEGMENTED DESIGN

Made of Fiberglass Reinforces Polyester (FRP) with four horizontal clamshell segments that are motorized independently to shield robotic telescopes.

MECHANICS & CORROSION PROTECTION

Each segment is controlled independently by heavy duty electric motors which can be stopped and firmly held in any given up/down position. Stainless-steel components and toothed drive sections are used for all assemblies.

DOME SKIN AND THERMAL BEHAVIOUR

The white double-skin FRP with a high gloss polished finish forms a weatherproof surface that is unaffected by temperature fluctuations.

ELECTRONIC CABINET

A protrusion opposite to the entrance door built to hold the dome electronics and control equipment with a standard rack mount cabinet.

ENTRANCE DOOR

Whether the dome is fully open or closed: users can always enter and leave the dome, especially in emergency situations.

DOME CONTROL

All dome electrical functions are controlled by the internal dome microprocessor via a hand controller. All dome functions may also be controlled remotely via API, ASCOM or INDIGO.

INNER SURFACE

The inner surface of the dome is coated with a non-reflective paint to mitigate stray light from affecting data collection and avoid hotspots to form during daytime operation.

SEALING / CAULKING

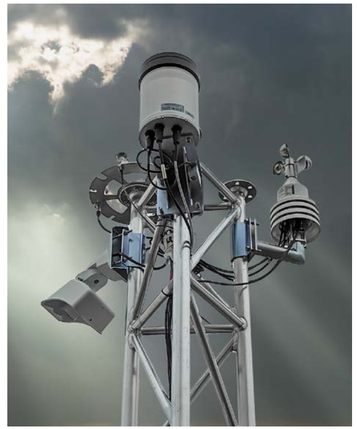
All domes are hermetically sealed in order to prevent snow, dust, and/or storm winds from entering. This also enables the end-user to easily control the environmental conditions within.

EMERGENCY WEATHER STATION

A component that is hard-wired to the control subsystem which commands the dome to close in case of precipitation or high wind speeds.

BAADER SLIT DOMES

OPTIONAL UPGRADES



PROFESSIONAL WEATHER STATION

If additional environmental situational awareness is desired for the observatory, a weather station that includes multiple sensors for weather data monitoring and logging.

ADVANCED PERFORMANCE UPGRADES

Structural upgrades and additional equipment can be added for the dome and equipment to survive environmental conditions with temperatures down to -80o C, wind loads of ≥250km/h, high sea state levels, and sites that are prone to lightning strikes.

CUSTOM MODIFICATIONS

For customers that desire mechanical through-holes with flanges and holders for electronic equipment.

UNINTERRUPTED POWER SUPPLY

Another fail-safe feature that is incorporated and only utilized for the dome to ensure self-closure in case there is a power failure.

DOME INTERIOR LIGHTING

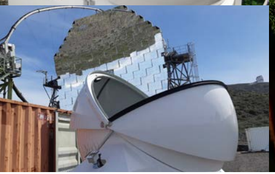
Downward-radiating wall lights can be provided in red and white light which can be separately controllable and dimmable.

LOCAL SITUATIONAL AWARENESS

An indoor and outdoor camera can be supplied to provide awareness of the status of your observatory.

AIR DRYING SYSTEM

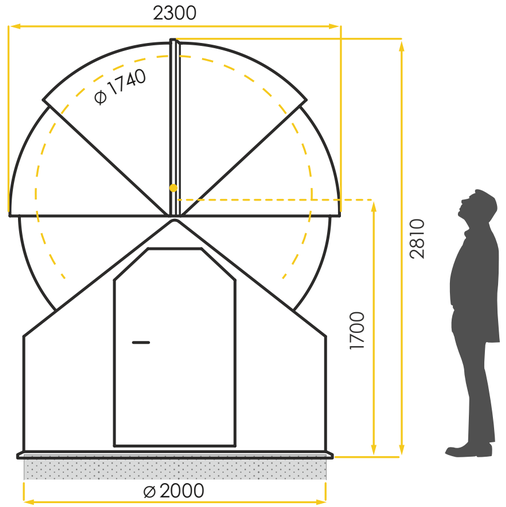
Depending on your site's location, an air dehumidifier is recommended to control moisture levels and create overpressure inside the dome.



⌀ 2,3 m

ALLSKY DOME

Total mass	~ 500 kg
Rec. Telescope Aperture	up to 400 mm
Power Parameters	230 V / 3 kW



PRIVATE OBSERVATORY, GERMANY

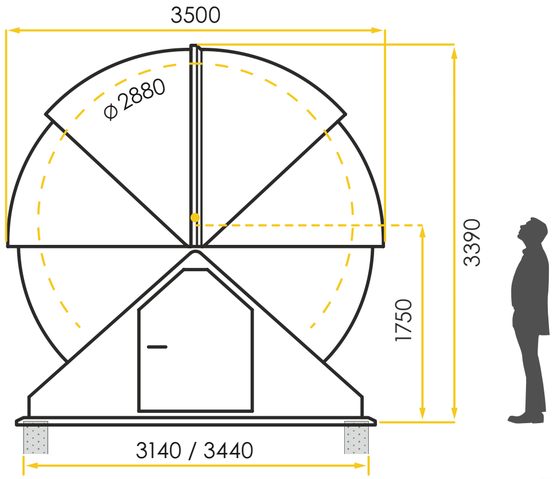
After almost 10 months of operation, I can now say about the Allsky Dome: workmanship, function, inside and out – perfect Baader precision. All the cables and motors that are used for the function – everything is neatly assembled and many small details have been taken into consideration.

Willy Herbstreit

⌀ 3,5 m

ALLSKY DOME

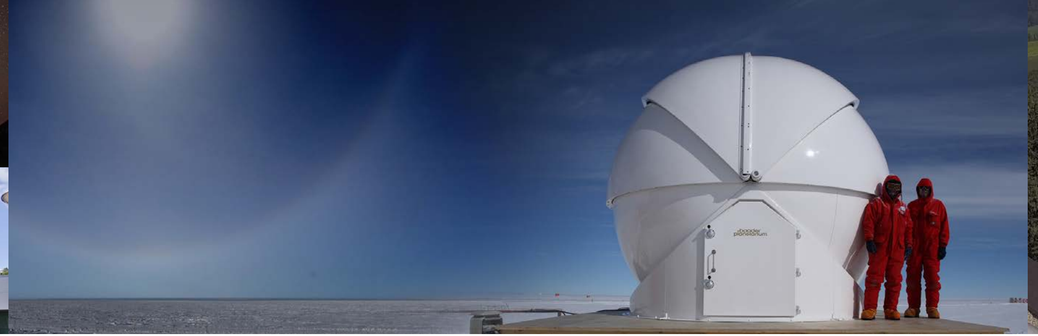
Total mass	~ 1.300 kg
Rec. Telescope Aperture	up to 800 mm
Power Parameters	230 V / 4.5 kW



SAAO, SOUTH AFRICA

The task of this 3.5M Baader AllSky dome at the South African Astronomical Observatory (SAAO) is to screen high-flying objects for the geostationary regime. By permanently monitoring the geostationary orbit, a collision of the constantly growing number of satellites shall be prevented.

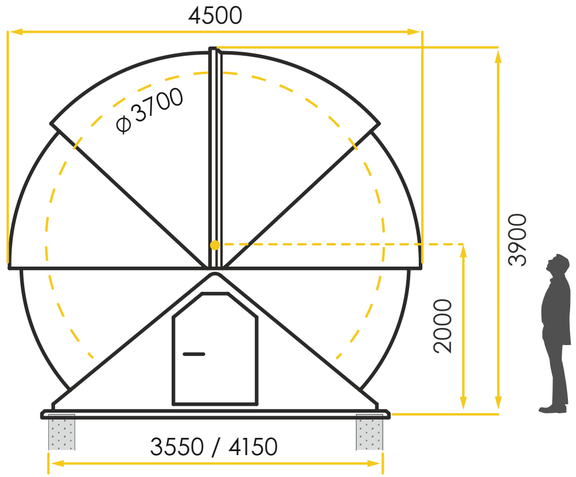
Dr. Hauke Fiedler
DLR (Deutsche Luft- und Raumfahrt)



ø 4,5 m

ALLSKY DOME

Total mass	~ 2.000 kg
Rec. Telescope Aperture	up to 1.000 mm
Power Parameters	230 V / 7.5 kW



PRIVATE OBSERVATORY, GERMANY

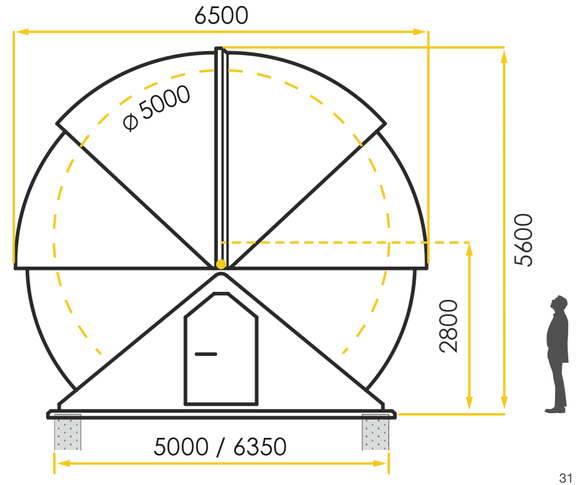
My observatory has been delivered „turn-key“ (including all equipment and accessories) by Baader Planetarium. The dome is the most important part of an observatory. For me, only a Baader dome can be considered as a protective structure against wind, raind and snow for my entire instrumentarium.

Günther Jilg

ø 6,5 m

ALLSKY DOME

Total mass	~ 5.000 kg
Rec. Telescope Aperture	up to 1,750 mm
Power Parameters	400 V 3ph / 18 kW



SALZBURG, AUSTRIA

The 6,5m AllSky-Dome of VEGA-Observatory in Salzburg houses a 1m reflector, the largest telescope in Austria available for public observations. The reliable system is easy to operate by our volunteers which resulted in a great Google-rating by our thousands of visitors.

Helmut Windhager, Dr. Lothar Kurtze
VEGA-Observatory

1. 6,5 m AllSky + 6,15 m Slit Dome for Haus der Natur, Austria
2. 2,3 m AllSky Dome for Max-Planck Institute, La Palma
3. 4,5 m AllSky for Hamburg University, Mallorca
4. 4,5 m & 3,5 m AllSky Dome for The Open University, Tenerife
5. 3,5 m AllSky Dome, Greece

BAADER ALLSKY DOMES

OVERVIEW

ALLSKY DOMES

Ø Dome Size		2.3 m	3.5 m	4.5 m	6.5 m
Recommended telescope aperture		up to 400 mm	up to 800 mm	up to 1.000 mm	up to 1.750 mm
Total Mass		up to 500 kg	up to 1.300 kg	up to 2.000 kg	up to 5.000 kg
Power Parameters	Voltage	230 V	230 V	230 V	400 V 3ph
	Max. Peak	3 kW	4.5 kW	7.5 kW	18 kW
Segments open & closing time(s)	Standard	30 s			60 s
	Highspeed	Optional			
Material		Fiber Reinforced Polyester (FRP)			
Survivable Wind Speed	Standard	up to 200 km/h,			
	Advanced	High-alpine and other extreme environments: up to 300 km/h			
Operational Wind Speed		60 km/h			
Survivable & Operational Temperature Range	Standard	-25°C to +40°C			
	Advanced	Extended range from -80°C to +50°C with Climatic Performance Upgrades			
Recommended RCD		300mA Residual Current Device (RCD)			
Command & Control		Manual, Hand Controller, RS232 and TCP/IP			
Communication Protocol		Proprietary API, ASCOM, INDIGO			
Mandatory Base Options		Short Cylinder (Wall Adapter) OR Cylindrical Base with Entrance Door			
Upgrades available upon requests		Absolute Encoders, Uninterrupted Power Supply, Professional Weather Station, Climatic / Environmental Perfomance Upgrades, Custom Modifications / Mounting Points, Lightning Mitigation			

TURN-KEY

OBSERVATORY SOLUTIONS

FROM ONE SOURCE

TURN-KEY OBSERVATORY SOLUTIONS

With 50+ years of experience, Baader Planetarium provides turn-key observatory solutions that include services from conceptualization up to installation and training. Depending on your application and mission parameters, we can also guide you through the process, including selection of the optimal equipment and software that is controlled by our Observatory Management System (OMS).

SPECIFICATIONS

- **Turn-key observatories** utilizing Classic Slit or AllSky domes that range from 2.1 - 8.5m
- **Various electronic equipment configurations**, that allow you to setup a classic observatory or one with remote access that can be fully autonomous
- **Tailored to your requirements,** suitable for amateur astronomers as well as for schools, universities, research institutes and commercial customers.

"The whole is greater than the sum of its parts"

Aristotle

INDIVIDUALLY TAILORED TO YOU

We would be pleased if you contact us regarding your observatory project at **www.baader-planetarium.com/dome-requests**

TURN-KEY SERVICES

BAADER DOMES

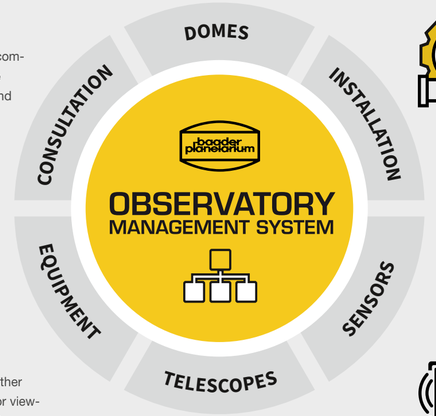
Whether it be a Classic Slit or an AllSky dome, different configurations are possible to meet your needs.

CONSULTATION & PLANNING

We assist by providing recommended solutions that are tailored to your location and requirements.

INSTALLATION & TRAINING

Our team ensures that your observatory is installed in accordance to the highest standards and we also provide training to the end-users.



ACCESSORIES

The right adapters, plates, and other accessories such as eyepieces or viewfinders are meticulously selected.

SENSORS & PHOTONICS

Different sensor and photonic equipment configurations can also be integrated as part of our solution offerings.

ROBOTIC TELESCOPES

We can equip your observatory with the desired telescope, mount, and pillar setup.

TURNKEY OBSERVATORIES

OBSERVATORY MANAGEMENT SYSTEM (OMS)

The OMS is your entry into remote operation: it is designed to function as your entire control center of all components in the observatory. It is therefore equipped only with high-grade and long-lived components. The OMS is delivered completely preconfigured and tested with your actual hardware by our astro-experienced IT-personnel, so you can start to do your remote observations from day one.

SPECIFICATIONS

- **Stainless steel switch cabinet housing (A) with controlled ventilation:**
  - Windows operated industrial computer with two LAN ports: one for access to customer network and one which hosts the entire observatory intranet.
  - Preconfigured with all ordered and additionally necessary software packages to run your entire observatory.
  - Separate power supplies for mount and 12V equipment
  - Industrial network switch
  - Network-based power switch to enable remote controlled reset of core components
  - Secondary lightning protection of the network and power system
  - **External Interfaces:**
    - Ethernet
    - USB 2.0 Type-A ports
    - 230 V EU Type-F plug (or other types depending on country and intake)
    - On / Off switch
  - **Internal Interface for integration:**
    - Customer Ethernet
    - 110 - 240 V AC supply voltage
- **Baader OMS-Hub (B)** that is mounted on the remote telescope for the equipment and sensors with the following interfaces:
  - 4x 12V/5A Outputs, 1x 12V CCD High Power Output
  - 4x USB 3.0 Type-A ports

A


B

FIND YOUR SUITABLE TURNKEY OBSERVATORY

TYPES OF OBSERVATORIES

CLASSIC OBSERVATORY

Suitable for on-site operation using manual control interfaces for the selected telescope configuration. The slit dome's azimuth movement is the only sub-system that is motor driven via the hand controller.

PRIVATE OBSERVATORY, GERMANY

The stability of the whole construction is remarkable. During the observation with a Baader Microguide eyepiece on the Celestron C11, I touched the sand filled column, knocked on it and leaned against it. The image in the eyepiece could not be shaken by anything!

Andreas Bringmann
Astrophotographer

REMOTE / ROBOTIC OBSERVATORY

These types of observatories can be utilized for multiple applications. All dome functions can be performed remotely and shall always have the capability of being operated by the hand controller, a computer interface, or the OMS.

OBSERVATORIO DEL TEIDE, TENERIFE

Our two (3,5m and 4,5m AllSky) autonomous robotic facilities PIRATE and COAST enable our distance learning students to experience authentic astronomical research, our astronomy research group to conduct competitive research projects, and the general public to engage with astronomy via the web portal.

Dr. Ulrich Kolb
The Open University

TURN-KEY OBSERVATORIES

STAGES OF CONSTRUCTION

1 TESTING IN OUR FACILITIES

All observatory components and assemblies are tested in-house for quality control.

2 CONTAINER LOADING AND SHIPPING

We pack and coordinate shipping to the designated destination.

3 DOME AND TELESCOPE INSTALLATION

The team inspects all components and installs your observatory.

4 FIRST LIGHT

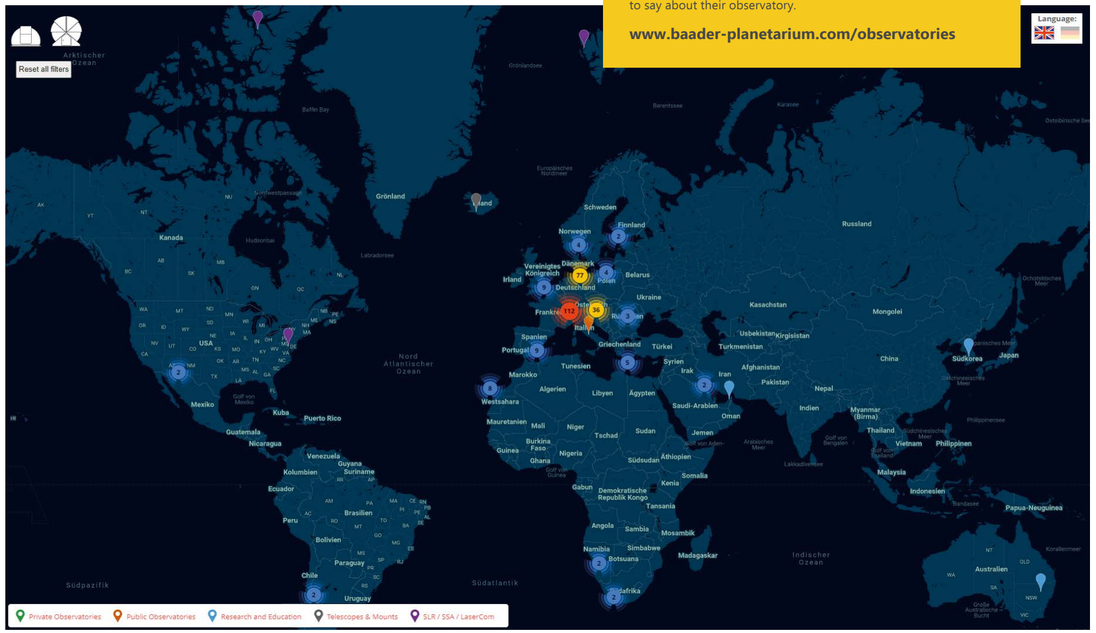
Once installed, the team takes the first astronomical image to ensure functionality and system performance.

BAADER OBSERVATORIES

AROUND THE WORLD

On our observatory world map you can see all the installations we are allowed to present with a multitude of pictures and information. Discover what the owners of our domes (even after decades) have to say about their observatory.

www.baader-planetarium.com/observatories



DISCOVER

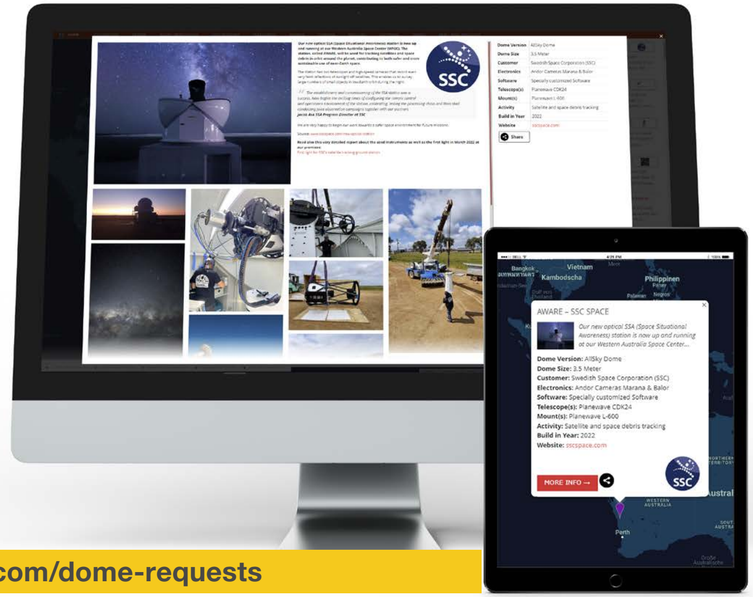
BAADER OBSERVATORIES

WE WOULD LIKE TO SEE YOU BE ADDED TO OUR WORLD-WIDE DOME INSTALLATIONS.

Please let us know how we can help you within your desired application by contacting us at:

kontakt@baader-planetarium.de

+49 (0)8145 / 8089-0



www.baader-planetarium.com/dome-requests

SINCE 1966

baader planetarium

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