



ESO Supernova Planetarium & Visitor Centre

The ESO Supernova Planetarium & Visitor Centre will be a cutting-edge astronomy centre, providing the public with an intense experience that will leave visitors in awe of the Universe we live in. The centre will provide school classes and families with an unforgettable learning experience, where even the most abstract and distant topics in astronomy and physics will be explained and visualised in an innovative way. The ESO Supernova contains a state-of-the-art, digital full-dome planetarium and an interactive astronomical exhibition. Guided tours will be offered to visitors, as well as workshops for students of all grades. Entry to the new facility, as well as to the planetarium, will be free of charge.

The ESO Supernova Planetarium & Visitor Centre is a collaboration between the European Southern Observatory ([ESO](#)) and the Heidelberg Institute for Theoretical Studies ([HITS](#)). The Klaus Tschira Stiftung ([KTS](#)), a German foundation that supports the natural sciences, mathematics and computer science, offered to fully fund the construction and ESO will run the facility.

General facts and numbers

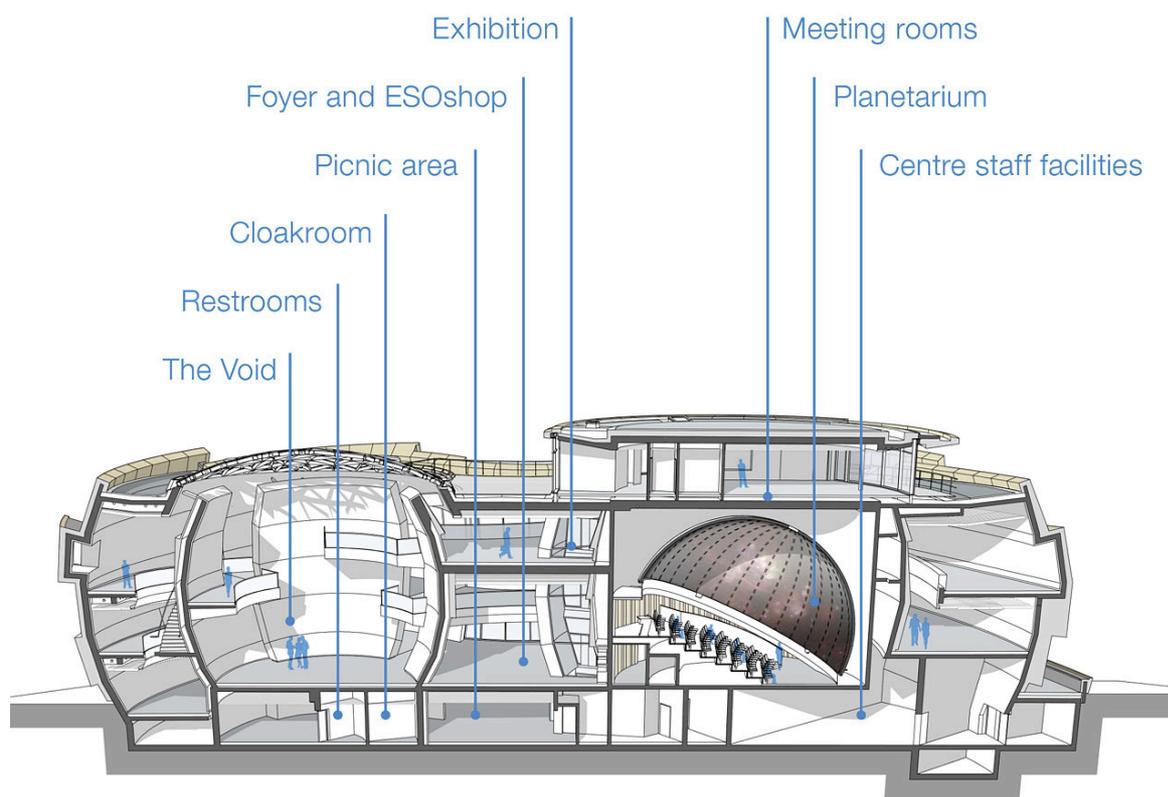
- The ESO Supernova Planetarium & Visitor Centre will be located at the ESO Headquarters in the [Forschungszentrum](#) Garching, some 15 kilometres north of Munich, Germany.

- The new building is a collaboration between [ESO](#) and the [Heidelberg Institute for Theoretical Studies \(HITS\)](#). The [Klaus Tschira Stiftung \(KTS\)](#) is funding the construction.
- The groundbreaking ceremony for the construction work was on 24 February 2015 and the visitor centre will open to the public during 2017.
- The ESO Supernova contains a modern, digital, full-dome planetarium.
 - The dome has a diameter of 14 metres, an inclination of 23.5 degrees and 110 seats.
 - It will be one of about 10 digital full-dome planetariums in Germany.
- The exhibition area covers almost 2200 m² distributed over three floors.
 - The exhibition is experienced by walking along a 255-metre-long gently-curving ramp.
 - 13 themes will introduce visitors to the science and technology behind modern astronomy and the place of the Earth in the Universe.
- Guided tours through the exhibition and to other ESO buildings are possible several times per day.
- The opening hours are planned to be 09:00 to 17:00 from Tuesday to Thursday, 09:00 to 21:00 on Friday, 10:00 to 21:00 on Saturday and 10:00 to 18:00 on Sunday.
- 50 000–200 000 visitors are expected to visit the ESO Supernova each year.
- Visiting the planetarium, the exhibition and joining a guided tour is free of charge.

Objectives

- To attract at least 50 000 visitors per year coming from Germany, ESO Member States and elsewhere.
- To offer educational experiences for at least 20 000 students per year from the local community, the rest of Germany and ESO Member States.
- To produce one new planetarium show per year, and offer it for free to the ESO Member States and the global community.
- To organise at least one weekly public event, including public talks given by astronomers from ESO and nearby research institutes in the Munich area.
- To conduct educational workshops targeted at students and divided into at least six different levels.
- To conduct at least 1000 guided tours for local and international visitors, as well as for students, each year.
- To conduct at least 1000 planetarium shows per year.
- To run educational planetarium shows targeted at students and divided into at least 4 different levels.
- To organise at least two teacher training sessions per year for teachers coming from the local community, as well as from the rest of Germany and ESO Member States.
- To develop and nurture a network of teachers in Bavaria, Germany and ESO Member States.
- To produce, translate and distribute educational material throughout Germany and the ESO Member States.

- To arrange at least one informal children's activity each weekend.
- To develop illustrations, other print material, video, including full-dome materials, explaining ten educational concepts in astronomy each year.



Building

- The new building's unique design will resemble the form of a binary star system, as it transfers mass from one component to the other, prior to going supernova.
- The design of this stunning, sleek building has been conceived by Klaus Tschira with the help of the Darmstadt architects [Bernhardt + Partner](#).
- The new centre will be the "sister" of the spectacular Haus der Astronomie, a centre for astronomy education and outreach in Heidelberg, Germany, founded in late 2008 by the Max-Planck Society for the Advancement of Science and the Klaus Tschira Stiftung. It was also designed by [Bernhardt + Partner](#).
- The new building will be integrated with the existing facilities, making use of current roads and entry points enabling easy access for both visitors and staff.

- The building consists of a basement, ground floor and three upper levels.
- A service road for maintenance and access for emergency services is incorporated into the design of the new complex, with additional parking spaces for staff and visitors being planned.

Usage of each floor

1 Foyer on the ground floor

- The foyer area on the ground floor serves as the reception for all visitors to the facility.
- Adjacent to the reception will be a shop where a wide selection of educational and other intriguing items can be purchased.
- Ticket machines will deliver free reserved tickets for all activities: seats in the planetarium shows, events, and guided tours.
- Visitors can view large information screens showing the day's schedule for the planetarium shows, public and educational events, and guided tours.

2 Planetarium and auditorium on the ground floor

- The digital state-of-the-art planetarium will hold 110 visitors in 360-degree dome with a 14-metre diameter and uni-directional seating, with an inclination of 23.5 degrees.
- It will be one of only about ten digital fulldome planetariums in Germany and the largest tilted planetarium dome in Germany, Austria and Switzerland.
- ESO plans to display up to nine shows per day in German or English.
- The crystal-clear digital projections onto the dome come from scientifically accurate three-dimensional astronomical databases and ensure a unique and authentic immersive experience. Each show also contains a live component, moderated by a presenter.
- The ESO Supernova will also offer the first real-time, data-driven distribution system for planetariums all over the world, which allows planetariums around the world to select and download interesting news and datasets provided by ESO on a daily basis and include them in their own planetarium shows.
- As with the exhibition, all planetarium shows are free of charge.

3 The Void

- The Void is a large cylindrical room, opposite the planetarium. It is 15.5 metres high, with a total area of 140 square metres. With its glass ceiling, the room has natural light during the day and a view of the sky at night.
- The lights mounted on the glass roof will resemble the constellation of the stars on the Southern hemisphere.
- The Void will function as a leisure area, including large sofas, and as starting point for the guided tours.

4 Exhibition space from the ground floor to the second floor

- The exhibition area will cover almost 2200 m² from the ground to the second floor along a 255-metre long path.
- The exhibition will start at the bottom of the building, culminate in a highlight at the top and then have its finale once the bottom is reached again.
- The duration of a visit will be flexible from a quick superficial 30-minute walk-through to a 4-hour in-depth study of all exhibits.
- The exhibition is called *The Living Universe*, and covers the topic of life in the Universe within 13 different themes. It connects visitors with topics that can seem very distant and abstract by focusing on the connection between humans on Earth and the vast Universe around them, general astronomy, life in the Universe, and how we observe the Universe using ESO facilities.
- The exhibition will be engaging, interactive and virtually enhanced. Visitors will be able to explore, touch and use real astronomical artefacts, conduct live experiments and participate in educational games.
- The exhibition also caters for teachers and educators in Bavaria and elsewhere by including educational concepts from the school curricula, allowing teachers to use parts of the exhibition to support and enhance the way in which they teach the material.
- The exhibition includes a small modern 3D cinema where visitors can enjoy 3D and 2D movies in English and German.
- As with the planetarium and the guided tours, the exhibition will be free of charge.
- All content is provided in English and German.

5 Seminar rooms on the 3rd floor

- Two seminar rooms named *Scorpius* and *Sagittarius* are available at the top of the building. They can be combined into one large room with a floor space of 166 m².
- The rooms will be used for educational workshops, for public talks, for company events, teacher training sessions and for administrative and scientific meetings.
- A roof terrace is provided for those wishing to take a break from seminars or who simply want to enjoy the views of the site.

6 Basement

- In the basement the visitors find toilets and cloakrooms as well as a picnic area with tables and chairs.
- Several self-service vending machines providing sandwiches, drinks, etc will be available.
- The snack area is next to an outdoor terrace that can be used in the appropriate weather conditions.
- All areas are designed with classroom visits in mind.
- The basement will also contain a planetarium workshop area, storage facilities, ten temporary and permanent working places for centre staff, a kitchenette, bathroom for staff and an audiovisual studio.

The visitor experience in the ESO Supernova

- ESO Supernova will emphasise astronomy's powerful impact on humans through its combination of science, philosophy and visually compelling images of the Universe.
- Visitors will see real-world, authentic exhibits from the most powerful telescopes on Earth and have a chance to interact at a personal level with passionate guides, educators and presenters.
- Visitors will feel inspired by the scientific discoveries humans have made and proud of the role Europe has played in advancing our understanding of the Universe.
- The ESO Supernova will offer an engaging learning experience through which the visitors will understand how exciting the exploration of our Universe is and how professional astronomers get to know about the origin, structure and evolution of astronomical objects.
- Visitors will learn about ESO's ambitious programme, which, by designing, constructing and operating the largest telescopes of the world, allows researchers to answer their questions.
- By watching the planetarium shows, visiting the interactive exhibition, and attending exciting face-to-face workshops, the public will be able to acquire knowledge about the Universe in a very active way and get to know what questions drive astronomers to explore the Universe and how they achieve this.
- All the information presented will be authentic and accurate, encouraging visitors to appreciate scientific information and always seek it.
- Provocative and aesthetic from start to finish in terms of the sensory experiences: music, acoustics, light, touch, visual impression; the ESO Supernova experience will keep the visitor engaged throughout their entire visit by making use of the most innovative exhibition and visualisation techniques available.
- In learning how researchers go beyond the natural barriers imposed by our senses, looking at the Universe at many different wavelengths, measuring the large cosmic distances, and grasping the scale of the Universe, visitors will feel connected to themselves, other people, Nature and the Cosmos.
- Visitors will realise the uniqueness and fragility of our pale blue dot, and the importance of preserving it for future generations.
- All in all, the visitor will have an intense experience that will leave them in awe of the Universe we live in, how scientific research improves our daily lives, and with a clear view and understanding of astronomy, as well as ESO and its partners' roles and activities.