

HOW TO GET TO SRT

SRT lies on the Strada Provinciale 25 (SP 25), in the southern Sardinia. We suggest some routes that are believed to be a fair balance of smoothness and mileage, so they may not reflect the choices of GPS navigation systems.

From Elmas airport or Cagliari

62 km | 58 minutes | 40% Travel 4 lane

Take the SS131 towards Oristano and turn at km 21.6 to Monastir > Senorbi > San Basilio > Silius > SP 25

From Cagliari and surrounding area

48 km | 50 minutes | 2 lanes

Take Route 554 and turn on the SS 387 towards Ballao. After Sant'Andrea Frius, go to SS 387 and turn towards Silius on the SP 25. SRT will be visible from the junction.

From Sassari / Nuoro / Oristano via SS131:

At 42.6 km turn for Furtei > Senorbi > Guasila > San Basilio > Silius > SP 25



GUIDED TOURS TO SRT

Thanks to the completion of the new Visitor Center, the SRT is able to accommodate large audiences of enthusiasts and students who annually visit the site. The dates of guided tours for schools and groups can be found on our websites.

facebook.com/INAF-OACagliari/
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Graphic project and photos
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WHAT IS A RADIO TELESCOPE

Radio telescopes are parabolic dishes similar to those used for satellite television, but the radio waves they receive come from distant objects such as stars and galaxies. Observing in the radio band allows us to see details that are not seen with visible light. Radio astronomy can not only advance scientific research, but also everyone's daily lives, thanks to the constant efforts to overcome the next technological limits.

BIRTH OF THE SARDINIA RADIO TELESCOPE

Designed in the 1990s and 2000s as a new research instrument shared between the National Institute for Astrophysics (INAF) and the Italian Space Agency (ASI), the Sardinia Radio Telescope (SRT) is managed by the Cagliari Astronomical Observatory (INAF-OAC), and works alongside its two Italian counterparts: the Medicina and the Noto telescopes. The construction, headed by the German company MTM, began in 2003 and ended in 2010.

START OF ACTIVITIES

The SRT was inaugurated in 2013, simultaneously with the move of the INAF-OAC headquarters from Capoterra to the Campus of Science and Technology in Selargius. A great party involved the enchanting and wild territory of the Gerrei, including San Basilio, the town that hosts the SRT thanks to its "radio silence". After an initial phase of "scientific commissioning", the first observations were performed in 2016.

TECHNOLOGICAL INNOVATIONS

The SRT can observe in a wide range of radio frequencies (0.3 ? 100 GigaHertz), thanks to the presence of several receivers that can be quickly interchanged. The 64-meter diameter parabola is composed of a thousand aluminum panels that are able to move independently, adapting the antenna to the different focal positions of the receivers, and compensating for the deformations due to temperature changes and the weight of the structure itself. These innovations distinguish SRT on an international level.

SRT	Sardinia Radio Telescope
Cost	EUR 60 millions
Weight	3000 tons
Height while "parking"	70 meters
Diameter of the "dish"	64 meters
Number of panels	1008 with active surface
Observable frequencies	from 0,3 up to 100 GHz



The Sun observed in multiwavelength - Credits NASA

SRT AND INAF: ASTROPHYSICS AND GEODESY

The SRT can observe celestial objects such as pulsars, neutron stars, planetary nebulae, galaxies and their clusters, extragalactic magnetism, star formation regions, black holes, masers, and more. Data can be collected using the single dish, or as part of a network with other antennas. Very Long Baseline Interferometry (VLBI) is a shared observational technique using antennas that simulate a single telescope and can also be used to measure the movements of the Earth (geodesy). Observations are not always directed at natural objects. The SRT will soon be involved in the SETI project (Search for Extra-Terrestrial Intelligence), which consists in listening to any type of non-natural signals that could have originated from other civilizations, possibly from some of the almost four thousand exoplanets discovered from 1995 to today.



Image credits: ESA

Re-entry of a satellite in the atmosphere

Orbiting Space Debris

SARDINIA DEEP SPACE ANTENNA FOR ASI AND NASA

Under the control of the Italian Space Agency (which owns 20% of the observing time), the telescope can be switched in antenna and used for space-related activities in SDSA mode (Sardinia Deep Space Antenna), and will participate in the Deep Space Network of NASA. In this configuration, SDSA will soon be able to send and receive data from interplanetary probes, track satellites, study space weather, monitor space debris, and ensure communications during manned missions to the Moon and Mars.