

## GUIDED TOURS TO SRT

SRT can be visited under reservation, the dates of guided tours for schools and groups can be found on our websites and social media.

facebook.com/INAF0ACagliari/  
facebook.com/SardiniaRadioTelescope/  
www.oa-cagliari.inaf.it  
www.srt.inaf.it  
Email [infosrt.oaca@inaf.it](mailto:infosrt.oaca@inaf.it)  
Phone +39 329 660 3812



For more information  
point your smartphone  
on the Qrcode

## HOW TO GET TO SRT

SRT is located near San Basilio, approximately 35 km north of Cagliari. To find the best route, from any part of Sardinia, just type «SRT» on the GPS navigator.



Pictures and graphics Paolo Soletta © INAF-OAC 2024



ENGLISH



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INAF  
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Agenzia Spaziale Italiana



PON  
RICERCA  
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2014 - 2020



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Osservatorio Astronomico di Cagliari



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## WHAT IS A RADIO TELESCOPE

Radio telescopes are parabolic dishes that receive information in the form of electromagnetic waves 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.

## 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.

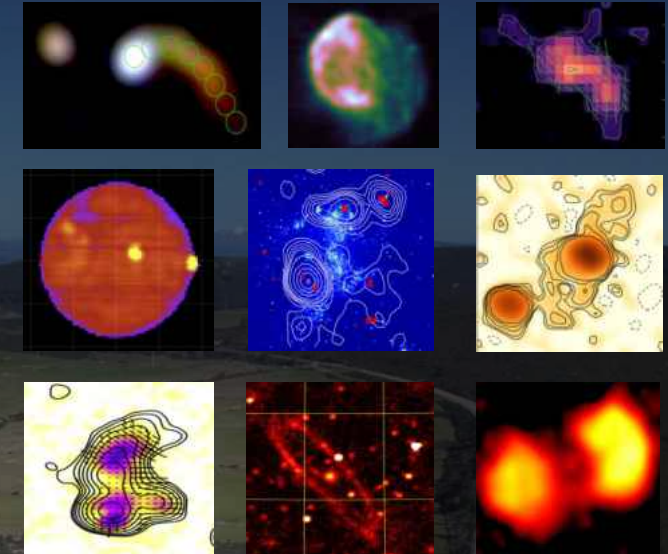
## START OF ACTIVITIES

The SRT was inaugurated in 2013 in San Basilio, one of the municipalities of the subregion called Gerrei, 35 km north of Cagliari. This place was chosen 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 100 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   |



## 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. Observations are not always directed at natural objects. Since 2021 SRT is actively involved in the **SETI** project (Search for Extra-Terrestrial Intelligence) listening to any type of **non-natural signals** originated from other civilizations, possibly from some of the almost five thousand **exoplanets** discovered from 1995 to today.

## 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 used for space-related activities in **SDSA** mode (**Sardinia Deep Space Antenna**), and participate in the **Deep Space Network** of **NASA**. In this configuration, SDSA is 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**.

