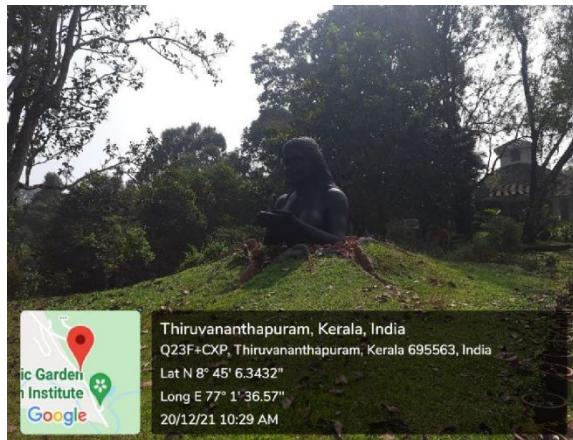


## **DEPARTMENT OF PHYSICS- FIELD TRIP 2021-2022**

- STUDY TOUR- STAR PROGRAMME- JNTBGRI**

The Study Tour as per the curriculum was visit to a local area to document environmental assets river/ forest/grassland/hill/mountain and study of common plants, insects, birds. The tour programme was planned for a day on 20/12/2021 (Monday) to Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Palode and Shendurney – Thenmala wild life sanctuary. 40 Students from second semester B.Sc. Physics and Computer Applications (CR) ,37 students of fifth semester and five faculties were participated in the tour program. Mrs. Kavitha P S the representative of the institute along with Dr Gopakumar, Technical officer extended a warm welcome and enlightened our minds and helped us understand how plants can be propagated. Mrs. Kavitha P S led us to the various sections of the institute. It possesses a wide variety of exotic ornamentals, flowering and foliage plants, as well as cacti and succulents (conserving more than 4000 species of flowering plants and about 300 species of non-flowering angiosperms). The Garden Center offers a large collection of plants for interior and outdoor landscaping, festive occasions, green walls and air purifiers for homes. Additionally, they also provided flower seeds and kitchen garden packets of many vegetables. We also visited the medicinal (Ayurveda) plant garden of 682 m in length. While walking along the trail, we familiarized with herbs, other species of the flora and fauna and features of the garden. The students were taken to different research labs and instrumentation labs in JNTBGRI and the scientists briefed them on the mandates of the lab and the uses of the sophisticated instruments like UV-Visible Chromatogram Gas chromatograph and Mass spectro Photometer. Through this endeavor, representatives of JNTBGRI provides valuable information on various local, exotic, rare and endangered plants to students and they also discussed the conservation status of the rare, endangered and threatened plants of the state.

Shendurney Wildlife Sanctuary in Kollam is a beautiful natural haven located in Southern Kerala. It was established in 1984 and covers a total area of 171 sq. km. It is the only wildlife sanctuary in the Kollam district and is renowned for its biodiversity and beauty. Shendurney Wildlife Sanctuary is a protected area in the Western Ghats, India, and comes under the control of Agasthyamalai Biosphere Reserve. It was established in 25 August 1984 and comprises 172.403 square kilometers. The sanctuary is full of many picturesque vantage points. It has a host of trekking trails that takes one on a wonderful journey through these evergreen forests. Irrigation in Kollam and Pathanamthitta districts is taken care of by the Thenmala Dam that was built across the Shendurney River. One comes across a rare tree species called Chenkurunji (Glutatravancorica) while travelling the forest. A safari was conducted which covered an artificial lake of nearly 18.69 Sq.km size surrounded by the reservoir of Thenmala Dam. We also spotted herds including deer and monkey. It is a gorgeous place to just relax and students enjoyed a nice picnic.



- STUDY TOUR- STAR PROGRAME - VSSC, THUMBA, THIRUVANANTHAPURAM AND PRIYADARSHINI PLANETARIUM**

An “Educational Trip” to VSSC, Thumba, Thiruvananthapuram and Priyadarshini Planetarium was conducted on 11/03/2022 for the students of I year B.Sc. Physics students (5 faculties and 40 students). A model of a satellite launcher at the entrance of the centre fascinated all the students. This center is dedicated to Sir Vikram Sarabhai for his contribution to the Space Research Program. For the benefit of students there is a space exhibition center at ISAC. Our students were able to see the exhibition. VSSC’S Staff explained each and every display unit kept for the exhibition. It includes the models of the first Indian satellite Aryabhatta, APPLE, INSAT series etc. Satellites are basically of two types- Indian Remote Sensing (IRS) satellites and communication satellites. IRS-1A was the first remote sensing mission undertaken by the Indian Space Research Organization (ISRO). It was a part-operational, part-experimental mission to develop Indian expertise in satellite imagery. Students also gained knowledge about how television signals are broadcasted with the help of satellites. A working model was demonstrated. Various images of India taken at different angles from the satellites, for the purpose of geographical/weather study were seen. Latest images of moon obtained from satellite was also shown. Different electronic devices used in satellite and space communication were explained.

Two enthralling 3D movies were shown to the students on the process of launching of Space Crafts and the activities of astronauts in space ship. The mechanism of launching of satellites were explained by the demonstrators through LED screen too. A video depicting the moon mission of ‘Chandrayaan’ was also displayed. At last, Scientists answered many of the doubts which students had about satellite launching. The Visit was a great benefit for the students to directly understand about the various concepts of satellite and space missions done by ISRO. The visit to VSSC was really a great experience and students learnt about geostationary satellites and polar satellites.

The science and technology museum includes planetarium, dinosaur park, butterfly park, children park and also a herbal garden. In the butterfly parks, there is different species of butterflies are exhibited there in flash boards. Butterflies are the symbol of a balanced and healthy nature. The life cycle of butterfly is an example of complete metamorphosis, as the beautiful adult butterfly emerges only after passing through the egg, larva and pupa stages. Their body parts are very delicate and life span is very small. Hence even the slightest imbalances in nature will affect them. In this park we were observe these wonderful creatures and tried to understand the glory of nature, its tenderness, its balance and of course its imbalances. We were collected many pictures of different species of butterflies from there.

The science and technology museum also contains a medicinal garden. Different medicinal plants are there. Rare species of herbal plants exhibited there. Plants have the ability to synthesis a wide variety of chemical compounds that are used to perform important biological functions and to define against attach from predators such as insects, fungi, and herbivorous animal. So medicinal plants are important in our life. We care them, we were collected some pictures of medicinal gardens and observe different varities of medicinal plants and discuss the importance and medicinal uses.



- **STUDY TOUR- STAR PROGRAME - KODAIKANAL SOLAR OBSERVATORY MUSEUM**

As a part of the curriculum of First Degree Program in Physics under CBCSS, the final semester students are directed to visit one science museum or research institute. So we conducted tour to Kodaikanal Solar Observatory. A one-day Industrial visit was organized on 22nd March of 2022 by Department of Physics of SN College Kollam for the 3rd year BSc. Physics and B.Sc. PCA students. Totally 65 students along with 3 coordinators were there for the journey. It was a great learning experience for the students. We, the group of 65 students and teachers have visited the Kodaikanal Solar Observatory museum with the prime intention of gaining knowledge on the solar aspects of Astrophysics. The faculties of Kodaikanal Solar Observatory have given a brief explanation about the various telescopes and other instruments used for solar observation.

The Kodaikanal Solar observatory of Astrophysics is located in the beautiful Palani range of hills in Southern India and owned and operated by the Indian Institute of Astrophysics. It was established in 1899 as a Solar Physics Observatory and all the activities of the Madras Observatory were shifted to Kodaikanal. Earlier the observatory was known as Solar Physics Observatory that later converted to its current name. The longitudinal

setting of this scientific abode makes it one of a kind spot to examine solar behaviour. The observatory houses the most comprehensive compilation of solar data, from as far as the 19th century. Furthermore, the place has an unusual geography that makes it especially the perfect spot to experience proper cosmic observations. At present, it features all the modern imaging apparatus and is the must-visit location to observe the celestial events. Visitors can see a 20 cm refractor here that helps in comet observations and to view relevant occultation event. The Observatory also boasts a famous Astronomy museum on campus for the tourists. The displays here are chiefly pictorial, backed by a couple of models. Visitors can also see the live solar image and the Fraunhofer spectrum while museum touring. The trip to the epitome of learning ground will present all the visitors with a core knowledge and display of all the astronomical elements researched here by far. Also, the biggest highlight is trying our own hands with the equipment present there to upgrade our aptitudes and enjoy discovering the magical galaxy. The Major highlights of Kodaikanal Solar observatory were

- Live sun-oriented image and sun's noticeable.
- Space science exhibition hall with sun-based models and pictures kept in plain view.
- Library that presents a rich collection of critical documents as well as the galactic report.



Kodaikanal, Tamil Nadu, India  
Unnamed Road, Kodaikanal, Tamil Nadu 624103, India  
Lat N 10° 13' 55.9272"  
Long E 77° 27' 48.402"  
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