FIELD TRIP

Every year the department staff and students visit CSIR Institutes on CSIR Open Day and visit Scientific Institutes on National Science Day(NGRI,NRSC, IMD, Birla Science Centre, Observatory Centre, Survey of India.

On the eve of National Science Day the department conducts Science Exhibition every year.

DETAILS OF FIELD TRIPS ORGANISED(2016-20)	
2018-19	**PAGE NO-(2-18)**
2019-20	**PAGE NO-(19-28)**

REPORT OF NATIONAL REMOTE SENSING FIELD TRIP

We the Department of Physics of GDC (W) Begumpet, consisting of two faculty members led a group of 29 students to a field trip to National Remote Sensing Centre (NRSC) at Jeedimetla, Hyderabad on 05th September 2018. We reached the centre at 9.30 AM. The objective of the trip was to expose/introduce/provide first hand feel to the students on the recent advancements in the field of Remote Sensing technology. In the Centre three scientists explained the concept of satellite technology and its application for the development of mankind in a very effective manner through PPT slides. After presentation and video of satellite launching, photos and specimen of rockets were exhibited and explained in an interactive manner. The students were able to distinguish the type of sensors (passive and active) GSLV & PSLV, different photos taken by the satellite of KailashManasSarovar, Rakshasthal, The images were obtained in continuous and discrete by different colours like Red (for vegetation), blue (water) by topographical which are segregated by Dept. of Space.There are five centres are working under ISRO for launching a satellite namely (NMRF – Sensor design & making) Remote sensing research (SAC) at Ahmedabad, VSSC (Trivandrum) LPSC (Liquid Profile Fuel required) SHAR (Integrated launch) were explained elaborately by senior scientists. For one satellite launch planning of 10 years and 70 days countdown is required. At present 104 satellites are launched and the target for 2020 is 200 .Satellites promote applications for taking information of irrigation, weather forecasting, forestry, agriculture, drinking water sources, weather forecasting, and Geo Sciences. The picture resolutions are of 4 types (spectral, spacial, temporal and radiometric).After exhibition session we allhad taken our lunch and reached our destination.This way the trip was very

informative, educative and enlightening one for our college students


nrsc
STARS

ACTIVITY REPORT OF FIELD TRIP TO BIRLA SCIENCE PLANETORIUM

We the Department of Physical Sciences (Physics, Mathematics and Statistics) of GDC (W) Begumpet consisting of faculty members (Dr.Ch.KanchanaLatha,) led a group of 50 students to a field trip to **BIRLA SCIENCE PLANETORIUM**

ON 4-2-2019. We reached the **PLANETORIUM** at 9.30 AM. The objective of the trip was to expose/introduce/provide first hand feel to the students on the recent advancements made in the field of CONCEPTS IN BASIC SCIENCES

Overall the students had first hand, knowledgeable and memorable experience on the working of **PLANETORIUM** and its contribution to the nation in the field of ADVANCES IN SCIENCE which is of immense value.

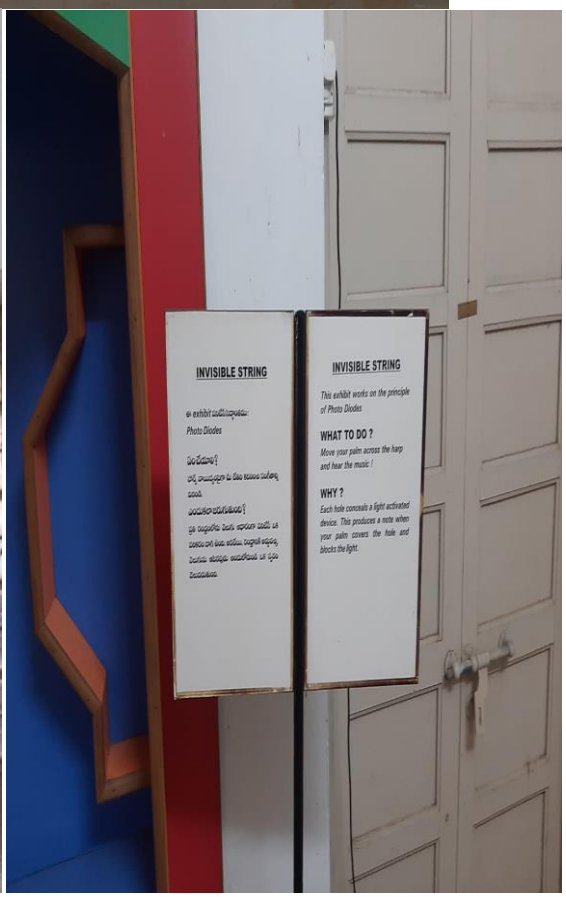
FIELD TRIP @BIRLA SCIENCE PLANETORIUM


WHY ?

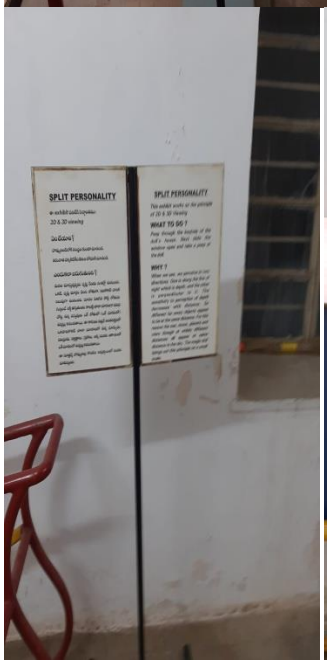

SPIN SPEED
SPIN SPEED
This exhibit works on the principle of conservation of Angular Momentum
WHAT TO DO ?
Spin the bycycle wheel rapidly. Holding it, sit on the rotation seat. Tilt the wheel upward and watch how the chair rotates. Then take the weights into the hands. Then rotate the chair holding the weights in your outstretched hands. Pull your hands in and feel the difference in rotation.
WHY ?
You are experiencing the strange furces which arise from rotational motion, due to the conservation of angular momentum.

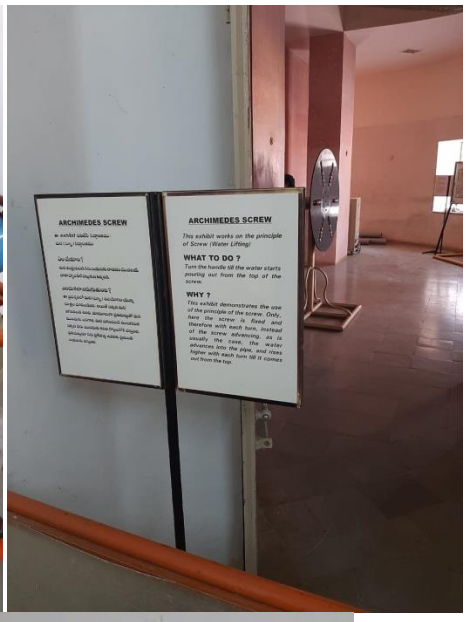

OPTICAL BENCH
OPTICAL BENCH
This exhibit works on the principle of the laws of optics.
WHAT TO DO ?
Move the lenses and the screen to different positions and try to focus the light source.
WHY ?
One lense is double convex. The other is double concave. Therefore the image of the filament is formed clearly and the other image is not seen clearly


GSLV
WT: 402 Tonne
PL: 2500kg in GTO
HT: 51 metre

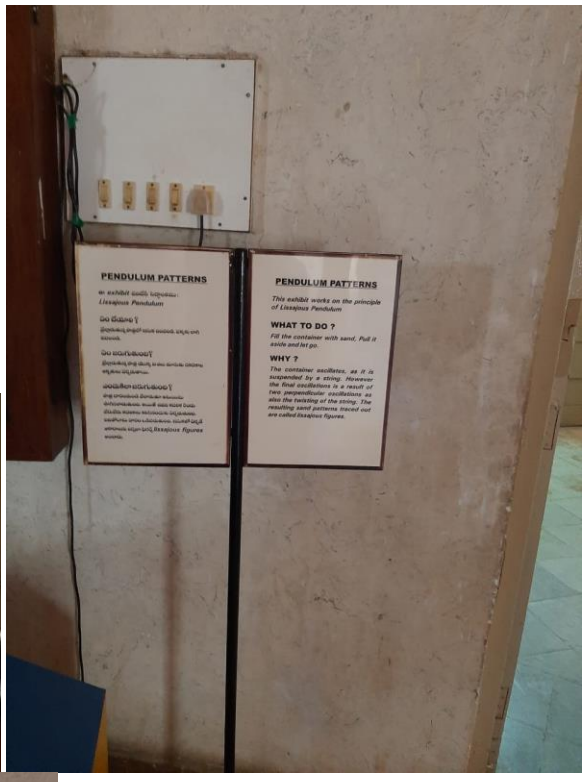

INVISIBLE STRING
INVISIBLE STRING
This exhibit works on the principle of Photo Diodes
WHAT TO DO ?
Move your palm across the harp and hear the music !
WHY ?
Each hole conceals a light activated device. This produces a note when your palm covers the hole and blocks the light.

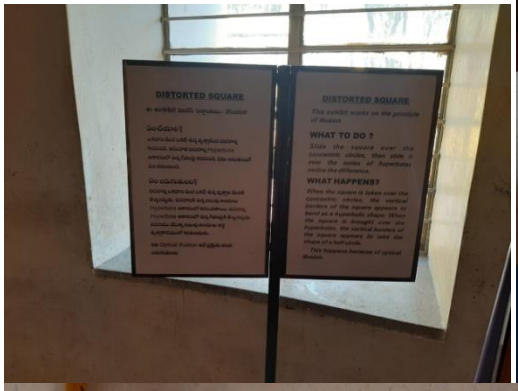

SPIN SPEED
SPIN SPEED
This exhibit works on the principle of conservation of Angular Momentum
WHAT TO DO ?
Spin the bycycle wheel rapidly. Holding it, sit on the rotation seat. Tilt the wheel upward and watch how the chair rotates. Then take the weights into the hands. Then rotate the chair holding the weights in your outstretched hands. Pull your hands in and feel the difference in rotation.
WHY ?
You are experiencing the strange forces which arise from rotational motion, due to the conservation of angular momentum.


SPLIT PERSONALITY
SPLIT PERSONALITY
WHAT TO DO ?
WHY ?


ARCHIMEDES SCREW
ARCHIMEDES SCREW
This exhibit works on the principle of Screw (Water Lifting)
WHAT TO DO ?
Turn the handle till the water starts pouring out from the top of the screw.
WHY ?
This exhibit demonstrates the use of the principle of the screw. Only, here the screw is fixed and therefore with each turn, instead of the screw advancing, as is usually the case, the water advances into the pipe, and rises higher with each turn till it comes out from the top.


RACE THE ROLLERS
RACE THE ROLLERS
This exhibit works on the principle of Moment of Inertia
What to do ?
What is happening?
Why ?

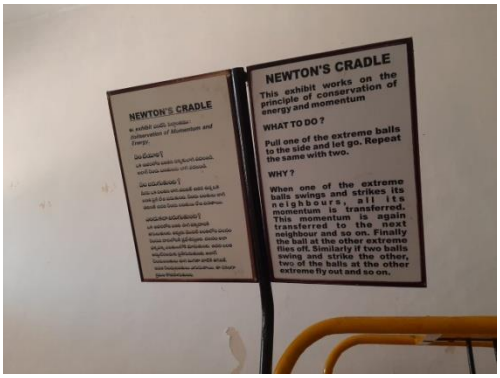

PENDULUM PATTERNS
PENDULUM PATTERNS
This exhibit works on the principle of Lissajous Pendulum
WHAT TO DO ?
Fill the container with sand, Pull it aside and let go.
WHY ?
The container oscillates, as it is suspended by a string. However the final oscillations is a result of two pependicular oscillations as also the twisting of the string. The resulting sand patterns traced out are called lissajous figures.


DISTORTED SQUARE
DISTORTED SQUARE
This exhibit works on the principle of illusion
WHAT TO DO ?
Slide the square over the concentric circles, then slide it over the series of hyperbolas notice the difference.
WHAT HAPPENS?


DEFYING GRAVITY
DEFYING GRAVITY
This exhibit works on the principle of Centrifugal force
WHAT TO DO ?
Set the wheel into rotation by giving a push to the rim and observe the balls
WHAT IS HAPPENING ?
When the wheel is stationary the balls are nearer to the rim.
WHY IT IS HAPPENING ?
As the balls rotate with the rim, they experience an out ward force due to the rotation (Centrifugal force)
The outward force acts upwards when the balls are on top and neutralises the downward gravity. It is to prevent the balls from falling to the centre.


PEDAL POWER
Conversion of Energy
PEDAL POWER
This exhibit works on the principle of Conversion of Energy
WHAT TO DO ?
Sit on the bicycle and pedal. Pedal away as more and more lights come on.
WHY ?
The mechanical energy from your pedalling legs is ultimately converted into electrical energy which lights the lamps.


SOLAR SYSTEM
Sun


NEWTON'S CRADLE
This exhibit works on the principle of conservation of energy and momentum
WHAT TO DO ?
Pull one of the extreme balls to the side and let go. Repeat the same with two.
WHY ?
When one of the extreme balls swings and strikes its neighbours, all its momentum is transferred. This momentum is again transferred to the next neighbour and so on. Finally the ball at the other extreme flies off. Similarly if two balls swing and strike the other, two of the balls at the other extreme fly out and so on.

ACTIVITY REPORT

We the Department of Physical Sciences (Physics,) of GDC (W) Begumpet consisting of faculty members and students led a group of 50 students to a field trip to Indian Meteorological Department (IMD) and Begumpet Airport on 30thDecember 2019. We reached the IMD at 9.30 AM. The objective of the trip was to expose/introduce/provide first hand feel to the students on the recent advancements made in the field of Weather forecast techniques for determining the surface weather temperature, rainfall, clouds, wind speed, wind direction, pressure and humidity. The parameters can be measured by using different types of thermometers (dry bulb, wet bulb and maximum and minimum thermometers).

For determining rainfall three types of rain gauges are used (ordinary, self –recording and automatic). For determining moisture (evaporation tank with pen phytograph) is used. For determining amount of water vapour (Hygro graph), temperature (thermo graph) and through satellite observations using DoplerRADAR.

The above parameters were explained in detail by three IMD Scientstsand its application for the development of mankind in a very effective manner through PPT slides. After presentation and live demonstration of Dopler RADAR the Scientists had an interaction with students.

Overall the students had first hand, knowledgeable and memorable experience on the working of IMD and its contribution to the nation in the field of weather forecast which is of immense value.


DOPPLER WEATHER RADAR


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
आदित्यात् जायते वृष्टिः
డాప్లర్ వాతావరణ రేడార్
डाप्लर मौसम रेडार

FIELD TRIP TO NGRI ON 17-1-20

ACTIVITY REPORT

We the Department of Physical Sciences of GDC (W) Begumpet consisting of faculty members led a group of 50 students to a field trip to NGRI ON 17-1-20.

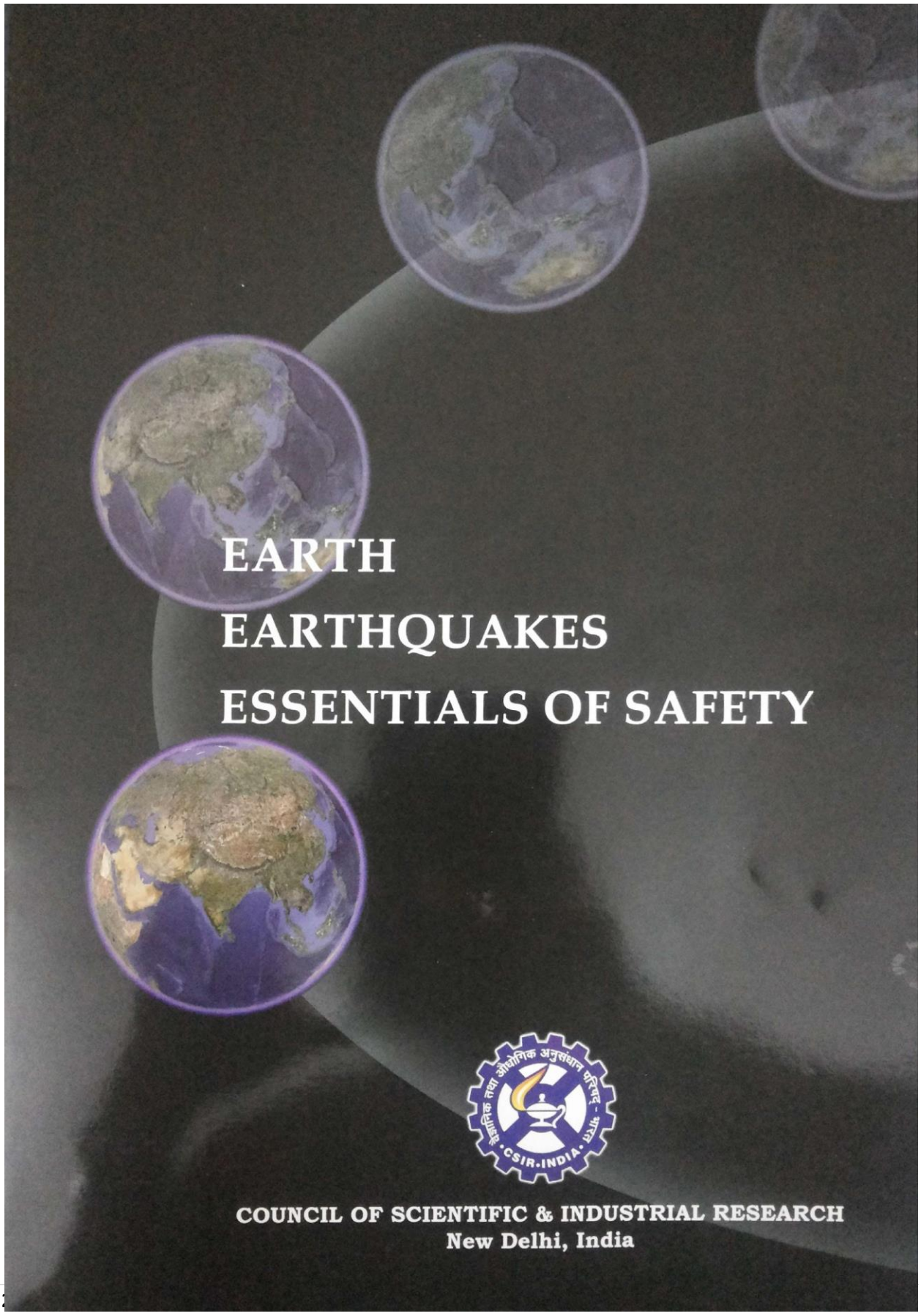
We reached the NGRI at 9.30 AM. The objective of the trip was to expose/introduce/provide first hand feel to the students on the recent advancements made in the field of SEISMOGRAPH AND SURFACE WATER TECHNOLOGY

For determining SEISMOGRAPH AND SURFACE WATER TECHNOLOGY The above parameters were explained in detail by three IMD Scientstsand its application for the development of mankind in a very effective manner through PPT slides. After presentation and live demonstration of SURFACE WATER TECHNOLOGY the Scientists had an interaction with students.

Overall the students had first hand, knowledgeable and memorable experience on the working of NGRI and its contribution to the nation in the field of weather forecast which is of immense value.

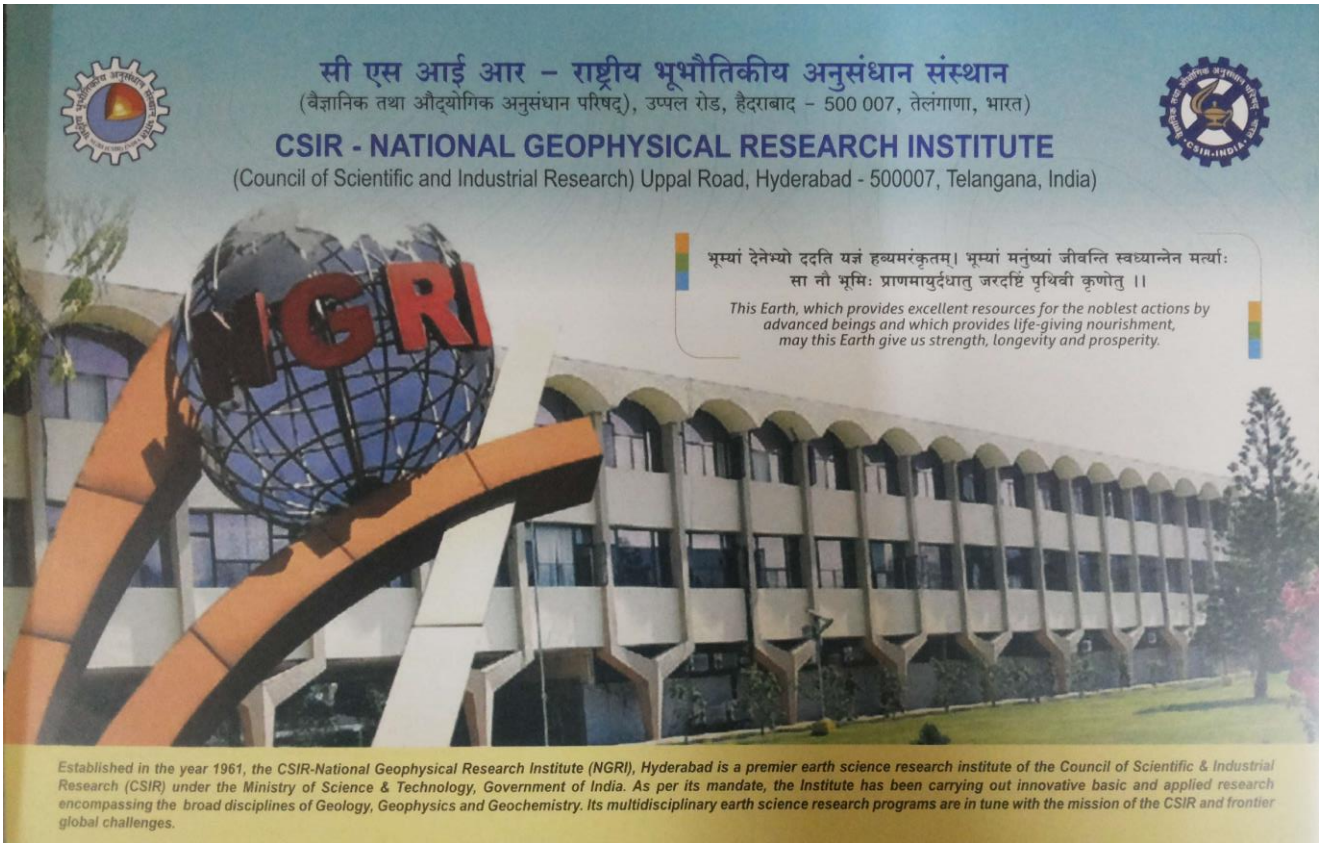

Determination of Epicenter
Earth's interior structure
Map showing seismic areas.


Target
Source Characterisation



EARTH
EARTHQUAKES
ESSENTIALS OF SAFETY

COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
New Delhi, India


सी एस आई आर – राष्ट्रीय भूभौतिकीय अनुसंधान संस्थान
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्), उप्पल रोड, हैदराबाद – 500 007, तेलंगाणा, भारत)
CSIR - NATIONAL GEOPHYSICAL RESEARCH INSTITUTE
(Council of Scientific and Industrial Research) Uppal Road, Hyderabad - 500007, Telangana, India)
NGRI
भूम्यां देनेभ्यो ददति यज्ञं हव्यमरंकृतम्। भूम्यां मनुंष्यां जीवन्ति स्वध्यान्नेन मर्त्याः
सा नौ भूमिः प्राणमायुर्दधातु जरदष्टिं पृथिवी कृणोतु ।।
This Earth, which provides excellent resources for the noblest actions by advanced beings and which provides life-giving nourishment, may this Earth give us strength, longevity and prosperity.
Established in the year 1961, the CSIR-National Geophysical Research Institute (NGRI), Hyderabad is a premier earth science research institute of the Council of Scientific & Industrial Research (CSIR) under the Ministry of Science & Technology, Government of India. As per its mandate, the Institute has been carrying out innovative basic and applied research encompassing the broad disciplines of Geology, Geophysics and Geochemistry. Its multidisciplinary earth science research programs are in tune with the mission of the CSIR and frontier global challenges.

FIELD TRIP TO OU OBSERVATORY @ MANCHALA (M) JAAPALA ON 20-2-2020.

ACTIVITY REPORT

We the Department of Physical Sciences (Physics, Mathematics and Statistics) of GDC (W) Begumpet consisting of faculty members led a group of 50 students to a field trip to ASTRONOMICAL OBSERVATORY CENTRE @ MANCHALA. We reached the ASTRONOMICAL OBSERVATORY CENTRE @ MANCHALA. at 9.30 AM. The objective of the trip was to expose/introduce/provide first hand feel to the students on the recent advancements made in the field of ASTRONOMY.

For determining BASICS IN SCIENCES SUCH AS MOMENT OF INERTIA,HOLOGRAPHY,ILLUSION AND DIFFERENT HOROSCOPIC SIGNS AND TERRESTRIAL TELESCOPE.

Overall the students had first hand, knowledgeable and memorable experience on the working of ASTRONOMICAL OBSERVATORY CENTRE @ MANCHALA. and its contribution to the nation in the field of astronomy which is of immense value.


JAPAL-RANGAPUR OBSERVATORY


JAPAL - RANGAPUR OBSERVATORY
OSMANIA UNIVERSITY

A visit to survey of India on NSD-3-2-2020

28-9-2018