# ADIKAVI NANNAYA UNIVERSITY

## UNIVERSITY COLLEGE OF ENGINEERING

Rajah RajahNarendra Nagar, Rajamahendravaram – 533 296, E.G.Dist., A.P. INDIA.

**Dr V Persis**
Principal

Mobile No:+91- 9866492711
Email: principal.aknuce@gmail.com


Date : 23 - 03 – 2022,
Rajamahendravaram.

**To,**
Head, Public Outreach and Space Museum
Satish Dhawan Space Center , SHAR
Sriharikota-524124.

Sir,

Sub : **Permission to visit Space Museum and facilities at SHAR - Request -Reg**

I am glad to inform you that University College of Engineering in Adikavi Nannaya University Campus was started during the academic year 2016-17 with 90 seats in 3 courses of B. Tech in CSE, IT, EIE and Electronics and Communication Engineering branch was started from the academic year 2017-18 with intake of 60 seats. Now the University College Engineering runs with 5 Course of B. Tech in CSE, EIE.ECE, Civil Engineering and Mechanical Engineering. Since its inception, University College of Engineering becomes synonymous with good discipline, academic excellence, good results and excellent placement record. Apart from imparting quality education, the college encourages the students to organize Workshops, Seminars, Technical Symposiums, Industrial Visits and participate in various co-curricular and extra-curricular activities. As part of their curriculum, the students are expected to make visits to organizations like yours to get practical exposure.

I shall be grateful if you extend co-operation by according permission to our 3rd Year Electronics and Communication Engineering students **(72 No's)** to visit Space Museum and the other facilities at Satish Dhawan Space Center on **16th April 2022** along with **Three** faculty members. If this date is not feasible, please suggest an alternative date in the same week.

I also request you to arrange an interaction session with two or more executives of your esteemed organization, which will enable our students to acquaint themselves with different aspects of your organization. I assure you that the students will not cause any inconvenience to you during the visit.

We look forward for favorable reply from you.

Thanking you Sir,

With Regards

UNIVERSITY COLLEGE OF ENGINEERING ANUR

23/03/22

Principal

Principal I/C
University College of Engineering
Adikavi Nannayya University
RAJAHMUNDRY-533 296 (A.P.)

भारत सरकार
अन्तरिक्ष विभाग
**सतीश धवन अन्तरिक्ष केन्द्र**
**शार**
श्रीहरिकोटा रेंज डा.घ.524 124,
नेल्लूर जिल्ला, आंप्र., भारत
टेलिफोन:+91-8623-245060 (10 जं)
फेक्स:+91-8623-225160

Government of India
Department of Space
**Satish Dhawan Space Centre**
**SHAR**
Sriharikota Range P.O. 524 121,
Nellore Dist., A.P., India
Telephones : +91-8623-245060 (10 Lines)
Fax : +91-8623-225160

GD/MSG/Visits/2022 April 26, 2022

**Sub: Permission for Visiting SDSC SHAR Facilities – Reg.**

****

This has the reference to your email/letter with the above subject. In this regard, kindly note that you may visit the Centre as per the date and time given below:

| | | |
|---|---|---|
| ★ | Approval Ref.No. | : **022/2022** |
| ★ | Date of Visit | : **10.05.2022 (Tuesday)** |
| ★ | Reporting Time | : **09:00 hrs.** |
| ★ | No. of Persons Permitted | : **Max. 100 only (Including Staff & Vehicle Crew)** |

Kindly confirm your visit either by Fax 08623-225082 or e-mail:ppo@shar.gov.in. If no confirmation is received (along with the visitors list) from University College of Engineering, Adikavi Nannaya University, Rajahmundry, on or before 04.05.2022, we presume that you have dropped your programme.

**Please go through the General Guidelines printed over-leaf for further details.**

For any queries / help, please do not hesitate to write / contact us (Ph.No. 08623 – 226092 / e-mail:ppo@shar.gov.in)

**Wishing you a happy visit.**

With regards.

**(P Gopi Krishna)**
**Group Director, MSG**
पी. गोपी कृष्णा P. Gopi Krishna
समूह निदेशक Group Director
एमएसजी MSG
एसडीएससी शार SDSC SHAR

**To**
**Principal**
**University College of Engineering**
**Adikavi Nannaya University**
**Rajahmundry – 533 296, A.P.**

# ADIKAVI NANNAYA UNIVERSITY
## UNIVERSITY COLLEGE OF ENGINEERING
Rajah RajahNarendra Nagar, Rajamahendravaram – 533 296, E.G.Dist., A.P. INDIA.

**Dr V Persis**
Principal

Mobile No:+91- 9866492711
Email: principal.ucoe@aknu.edu.in


**From :**

The Principal

University College of Engineering

Adikavi Nannaya University

Rajamahendravaram, East Godavari District, Andhra Pradesh

**04-05-2022.**

**To,**

**Public Relation Officer**

Head, Public Outreach and Space Museum

Satish Dhawan Space Center , SHAR

Sriharikota-524124.

Sir,

Sub : Details for Visiting SDSC- SHAR - -Reg

With reference to your approval letter No:02/2022, we are very much thankful to you for permit to visit our students to SDSC-SHAR Sriharikota on 10-05-2022. In this connection, Here I attached the list of Students and Our staff and also the contact details of Visit Coordinator for further Communication.

| | |
|---|---|
| Name of the Visit Coordinator | : P.Venkata Ratnam |
| Designation | : Assistant Professor, Department of ECE |
| Mobile No | : 9848791413 |
| e-mail Id | : pvr.ece@aknu.edu.in |

I also request you to arrange an interaction session with executives of your esteemed organization, which will enable our students to acquaint themselves with different aspects of your organization. I assure you that the students will not cause any inconvenience to you during the visit.

Thanking you Sir,

With Regards

Principal

UNIVERSITY COLLEGE OF ENGINEERING ★ ANUR ★

Principal
University College of Engineering
Adikavi Nannayya University
RAJAHMUNDRY-533 296 (A.P.)

# ADIKAVI NANNAYA UNIVERSITY
## UNIVERSITY COLLEGE OF ENGINEERING
Rajah RajahNarendra Nagar, Rajamahendravaram – 533 296, E.G.Dist., A.P. INDIA.

**Dr V Persis**
Principal

Mobile No:+91- 9866492711
Email: principal.ucoe@aknu.edu.in


## Details for Visiting SDSC-SHAR Facilities

Approval Ref.No : **022/2022**
Organization Name & Address : University College of Engineering
Adikavi Nannaya University
Rajamahendravaram, East Godavri District , Andhra Pradesh

Date of Visit : **10-05-2022**
Contact No : Principal : **9866492711** Faculty : **9848791413**

| Sl.No | Student Name | Age | Class/Branch & year | Aadhar No | Organization ID No. ( Roll Number) | Contact No. |
|---|---|---|---|---|---|---|
| 1 | ADAPUREDDI LOVA RAJU | 21 | ECE 3rd year | 651784621025 | 198297603001 | 7569844787 |
| 2 | A.Vijaya Lakshmi | 20 | ECE 3rd year | 892954704295 | 198297603002 | 8340945662 |
| 3 | Asula sanjay | 20 | ECE 3rd year | 538185235923 | 198297603004 | 9441909720 |
| 4 | CHINTHADA HEMANTH | 19 | ECE 3rd year | 829690200895 | 198297603007 | 8374756832 |
| 5 | Gandrala sahith vamsi | 20 | ECE 3rd year | 66233958 0347 | 198297603010 | 6305657477 |
| 6 | Anvesh | 20 | ECE 3rd year | 340193507522 | 198297603011 | 7032193985 |
| 7 | Kandregula Karunakumari | 20 | ECE 3rd year | 83136023 5182 | 198297603013 | 8688454344 |
| 8 | KARE YESWANTH RAJ | 19 | ECE 3rd year | 863308895539 | 198297603014 | 9642776853 |
| 9 | KOLLATI MOUNIKA | 20 | ECE 3rd year | 840783833290 | 198297603015 | 9390364757 |
| 10 | KOTA JANAKI RAM | 20 | ECE 3rd year | 859048483814 | 198297603017 | 7095305425 |
| 11 | Lingam Anand | 21 | ECE 3rd year | 50134957 1004 | 198297603020 | 7997421946 |
| 12 | Madduri Vyshnavi | 20 | ECE 3rd year | 901490496543 | 198297603021 | 9390866196 |
| 13 | Manepalli.Manila | 20 | ECE 3rd year | 491048001773 | 198297603022 | 9059928318 |
| 14 | M.Ravi chandra | 20 | ECE 3rd year | 340137548904 | 198297603023 | 8919355174 |
| 15 | M.Ashika Vency | 19 | ECE 3rd year | 948768627844 | 198297603024 | 7386080418 |
| 16 | N sneharamkumar | 20 | ECE 3rd year | 833278840203 | 198297603025 | 9381627891 |
| 17 | N.Madhusree | 19 | ECE 3rd year | 500480956646 | 198297603029 | 9493019723 |
| 18 | Pakki vinay | 21 | ECE 3rd year | 313275577495 | 198297603032 | 9963547296 |
| 19 | Naveen pallepogu | 20 | ECE 3rd year | 979217192670 | 198297603034 | 9381068202 |
| 20 | Navya peetala | 20 | ECE 3rd year | 998421329791 | 198297603035 | 9390284378 |
| 21 | P.Kiran Sameer | 20 | ECE 3rd year | 265335566188 | 198297603036 | 8522925342 |

ADIKAVI NANNAYA UNIVERSITY
UNIVERSITY COLLEGE OF ENGINEERING
Rajah RajahNarendra Nagar, Rajamahendravaram – 533 296, E.G.Dist., A.P. INDIA.

**Dr V Persis**
Principal

Mobile No:+91- 9866492711
Email: principal.ucoe@aknu.edu.in

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | Poranki Vasu Ramachandra Raju | 20 | ECE 3rd year | 884827667234 | 198297603037 | 6281776246 |
| 23 | Pothala Purna Chandra Naidu | 21 | ECE 3rd year | 254743384333 | 198297603038 | 7386194359 |
| 24 | P.Satish | 21 | ECE 3rd year | 664839865018 | 198297603039 | 7013642612 |
| 25 | S.Pavan Sai Srikanth | 20 | ECE 3rd year | 287766294277 | 198297603042 | 8688979642 |
| 26 | Sowbhagya samireddy | 19 | ECE 3rd year | 713900593951 | 198297603043 | 9963614188 |
| 27 | Shaik ashish nawaz | 20 | ECE 3rd year | 413524157214 | 198297603045 | 9666456893 |
| 28 | Sk .Rameez | 21 | ECE 3rd year | 221104463259 | 198297603046 | 6301819933 |
| 29 | LAKSHMINARAYANA SINGILIDEVII | 21 | ECE 3rd year | 954894954072 | 198297603048 | 9381890985 |
| 30 | BABY TALARI | 20 | ECE 3rd year | 662562708045 | 198297603051 | 6305716659 |
| 31 | TANTAPUREDDY UMA MAHESH | 19 | ECE 3rd year | 370196953889 | 198297603052 | 8688148403 |
| 32 | Tatraju Venkatesh | 21 | ECE 3rd year | 647764042526 | 198297603053 | 9381310244 |
| 33 | TVSSANDEEP | 20 | ECE 3rd year | 3478 02202978 | 198297603054 | 6281760271 |
| 34 | Aravind tumula | 20 | ECE 3rd year | 756805955904 | 198297603055 | 9391938941 |
| 35 | U. Harika | 20 | ECE 3rd year | 659942059525 | 198297603056 | 8341461107 |
| 36 | V.s.sridhar naik | 19 | ECE 3rd year | 685142377702 | 198297603057 | 9959468589 |
| 37 | V.Sriya Sarvani | 19 | ECE 3rd year | 761159229379 | 198297603058 | 9390564859 |
| 38 | Vendra Gemini Jayanth | 20 | ECE 3rd year | 544922981723 | 198297603059 | 7702704386 |
| 39 | Vidyapati. Karthik | 21 | ECE 3rd year | 339605406276 | 198297603060 | 9381264667 |
| 40 | Yellu Jagadeesh | 20 | ECE 3rd year | 463812826415 | 198297603062 | 8790087941 |
| 41 | Nemala Devi Priyanka | 20 | ECE 3rd year | 924545903071 | 198297603066 | 9014941166 |
| 42 | P sai krishna srinivas | 20 | ECE 3rd year | 7544 8903 329 | 198297603067 | 9490289307 |
| 43 | P.Preethi Susmitha | 19 | ECE 3rd year | 543915340628 | 198297603069 | 8309758369 |
| 44 | P. RANJITH KUMAR | 20 | ECE 3rd year | 598801801939 | 198297603070 | 9182248450 |
| 45 | Tigiripalli vijay kumar | 22 | ECE 3rd year | 843756767907 | 198297603071 | 7799143201 |
| 46 | A.Bhagya Lakshmi | 21 | ECE 4th year | 970933901920 | 188297603001 | 6309503669 |
| 47 | Allu Nikhila | 21 | ECE 4th year | 656577371487 | 188297603002 | 6304880868 |
| 48 | BADUGU MERCY GOLD | 20 | ECE 4th year | 465926031040 | 188297693003 | 8309116121 |
| 49 | Bevara kameswari | 20 | ECE 4th year | 974125348620 | 188297603004 | 8465950115 |
| 50 | Bourubilli Vanisri | 21 | ECE 4th year | 261851776987 | 188297603005 | 6281321994 |
| 51 | Karishma Chelluboyina | 20 | ECE 4th year | 644439725995 | 188297603006 | 9398236009 |

# ADIKAVI NANNAYA UNIVERSITY
## UNIVERSITY COLLEGE OF ENGINEERING
Rajah RajahNarendra Nagar, Rajamahendravaram – 533 296, E.G.Dist., A.P. INDIA.

**Dr V Persis**
Principal

Mobile No:+91- 9866492711
Email: principal.ucoe@aknu.edu.in


| | | | | | | |
|---|---|---|---|---|---|---|
| 52 | Devada Govardhini | 21 | ECE 4th year | 654283457203 | 188297603007 | 6305660044 |
| 53 | Sai Anil Kumar Deyyala | 21 | ECE 4th year | 620860365812 | 188297603008 | 8096022707 |
| 54 | Godi keerthi komal | 21 | ECE 4th year | 929854783388 | 188297603009 | 7013719933 |
| 55 | Hemanth Suresh Kumar Koppisetti | 21 | ECE 4th year | 472419335104 | 188297603010 | 9381126623 |
| 56 | J.Nitish | 21 | ECE 4th year | 832302118129 | 188297603011 | 9502486923 |
| 57 | K. Durga Prasad | 21 | ECE 4th year | 220074257969 | 188297603012 | 8790235398 |
| 58 | Korangi sri venkata sai chaturya | 21 | ECE 4th year | 896411088523 | 188297603013 | 9381139447 |
| 59 | K. Akash | 21 | ECE 4th year | 636099679569 | 188297603014 | 9398041791 |
| 60 | Mahanthi Renuka | 20 | ECE 4th year | 773112636946 | 188297603015 | 7993558276 |
| 61 | Majji Sudha Rani | 21 | ECE 4th year | 482214661801 | 188297603016 | 6304016525 |
| 62 | Matcha Prasanth kumar | 21 | ECE 4th year | 316173326123 | 188297603018 | 6301458061 |
| 63 | Mavuri Dinesh Sai Ganapathi | 21 | ECE 4th year | 978138372158 | 188297603019 | 9959552386 |
| 64 | MEDISETTI KAVYA SREE | 21 | ECE 4th year | 279734613385 | 188297603020 | 9381085984 |
| 65 | Pasupuleti Srivalli | 21 | ECE 4th year | 514623180243 | 188297603021 | 7036295361 |
| 66 | Sanampudi Sobith | 20 | ECE 4th year | 804659135306 | 188297603022 | 7670834041 |
| 67 | SHEIK ASIF MAHABOOB KHAJA RASOOL KAREEM | 21 | ECE 4th year | 507338247704 | 188297603023 | 9391451522 |
| 68 | Udatha R S V V Sai Kumar | 21 | ECE 4th year | 236943625457 | 188297603024 | 9573407709 |
| 69 | Vemulapudi Sai Susmitha | 21 | ECE 4th year | 997513230794 | 188297603025 | 8247276696 |
| 70 | Srikanth Yenugupalli | 22 | ECE 4th year | 467429253434 | 188297603026 | 8340096052 |
| 71 | B. Naveen kumar | 21 | ECE 4th year | 750590000110 | 188297603027 | 9133113116 |
| 72 | D.Yamini | 21 | ECE 4th year | 797584807218 | 188297603028 | 6303505334 |
| 73 | Darapureddy Lokesh | 20 | ECE 4th year | 572563438295 | 188297603029 | 9866402415 |
| 74 | DEYYALA DURGA BHAVANI | 21 | ECE 4th year | 418186556687 | 188297603030 | 8341914857 |
| 75 | Kella Umamaheswari | 21 | ECE 4th year | 769458221529 | 188297603031 | 9381646579 |
| 76 | Vakacharla Sai Dattha | 21 | ECE 4th year | 338106182921 | 188297603032 | 7799873125 |
| 77 | Varigeti Vandana | 20 | ECE 4th year | 213131383493 | 188297603033 | 9848442889 |
| 78 | P.VenkataRatnam | 51 | Asst. Prof | 763139533627 | Faculty | 9848791413 |
| 79 | A.Vijaya Durga | 35 | Asst. Prof | 322059269235 | Faculty | 9989032311 |
| 80 | B.Annie Keziah | 28 | Asst. Prof | 395759543994 | Faculty | 8500106868 |
| 81 | G.Suneela | 38 | Lab Technician | 401148461151 | Staff | 9440538471 |

ERSITY COLLEGE OF ENGINEERING

With Regards

Principal
University College of Engineering
Adikavi Nannayya University
RAJAHMUNDRY-533 296 (A.P.)

# ADIKAVI NANNAYA UNIVERSITY::RAJAMAHENDRAVARAM

## UNIVERSITY COLLEGE OF ENGINEERING

### DEPARTMENT of ELECTRONICS AND COMMUNICATIN ENGINEERING

# A REPORT ON INDUTRIAL VISIT TO SDSC-SHAR (ISRO)

An industrial visit to SDSC-SHAR (ISRO), Sriharikota has been organized by Department of Electronics and Communication Engineering of ADIKAVI NANNAYA UNIVERSITY, University College of Engineering Rajahmundry, for 78 students of B.Tech III & IV year on 10- MAY-2022 who were accompanied by three faculty members , Mr. A. Vijaya Durga Asst.Prof., Mr. P. Venkata Ratnam  Asst.Prof., Ms.Sunella Lab.Asst.,

The objective of the visit was to provide a Technical Exposure to the students about Space Technology and advancements in Technology. The visit not only provided a good insight into the quality of research happening in the area of space technology but also gave great exposure to the students about the future career prospects and areas of research in applied sciences.

## ABOUT ISRO AND SDSC SHAR

ISRO is the primary space agency of India and one of the largest space research organizations in the world. SATISH DHAWAN SPACE CENTRE (SDSC) or SRIHARI KOTA HIGH ALTITUDE RANGE (SHAR) is a rocket launch centre operated by Indian space research organization (ISRO). Sriharikota island was chosen in 1969 for a satellite launching station. The centre became operational in Oct 1st 1971. It is located in Sriharikota in Andhra Pradesh. The Sriharikota range has been chosen for its proximity to the equator and to use the rotation of the earth. It is close to lake PULIKAT and it is about 100km north of Chennai and close to the BAY OF BENGAL.

## Summary of the Visit

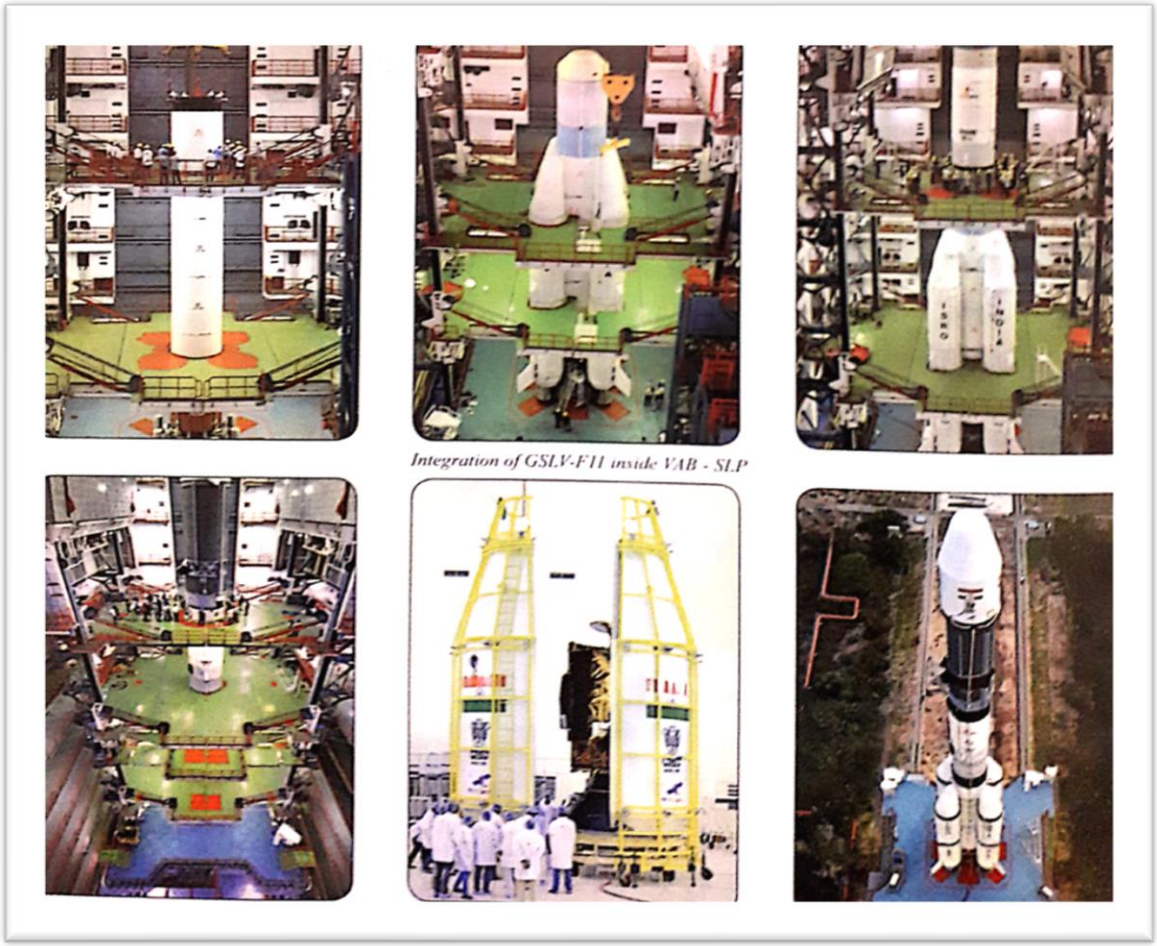
Two buses with students started from ADIKAVI NANNAYA UNIVERSITY, University College of Engineering Rajahmundry at 4:30 P.M. on 09/05/2022.

And reached Sullurpet, a nearby town to ISRO at 5:30 A.M, on 10/05/2022 where accommodation was provided to the students and faculty at Lathika Guest Rooms hotel. After Breakfast, we started to ISRO SDSC Centre and reached there by 09.45. A.M.

After several security checks and administrative formalities, Students were taken to a central building. B.P Hall, with the help of Guide **Mr. K.MURTHY NAIK (Lib Asst)** In this place, they were shown a video – 'Gateway to Space' – on the ISRO, its history, and the current facilities available.

## THE 'GATEWAY TO SPACE VIDEO'

The GSLV and PSLV are the two launch vehicles used currently by ISRO to launch satellites into the geosynchronous and polar orbits respectively. The GSLV has 3 stages – the first is a solid (fuel) stage, the second a liquid (fuel) stage and the third is a cryogenic stage. The satellites launched so far have applications such as National development/infrastructure, telecom, disaster warnings, resource management, etc The PSLV can launch multiple satellites Simultaneously at a low cost and high reliability.




The various facilities at SDSC were listed and their functions are explained in brief. Weather prediction is another important factor at the time of launch, and the SHAR boasts of this facility too. The latest addition to the SDSC was the S200 propellant plant. The strap on motors, their dimensions and use were elucidated.

The countdown begins at (t-57) hours. At this time, the liquid propellants are filled into the system. At (t-16) hours, the mobile service car is withdrawn and the system is connected to the

Launch and Mission control centre (which are placed 6km from the launch site) through electrical wires only. The cryogenic fuel is set around the launch site. The performance is monitored in real time. At about 17 minutes after blast off, the GSLV completes the mission – puts the satellite in geosynchronous orbit. After this, students were taken to several locations within the SDSC, with a guide to explain the locations.

## MISSION CONTROL CENTRE (MCC)

The mission control is the focal point of controlling the vehicle. There are 8 'hold buttons' at different places around the range. In case of abnormalities in subsystems (affecting the health

of the rocket), the hold button is used to terminate the countdown. In case the abnormality has been resolved, the first row is used to supervise the control of the launch vehicle.

These computers are connected by Ethernet and fibre optics. There is a separate ring safety server which is controlled by a senior scientist. In case of abnormalities in the path of the rocket, this person can detonate the rocket so that the rocket is blown up over the sea and does not affect neighbouring human population. There are 45 levels of information relating to the launch of the rocket. The vehicle Director authorises the launch at (t16) minutes. An automatic sequence program checks the health of the rocket (with respect to various parameters) and ensures that any deviations in the parameters are within specific limits.

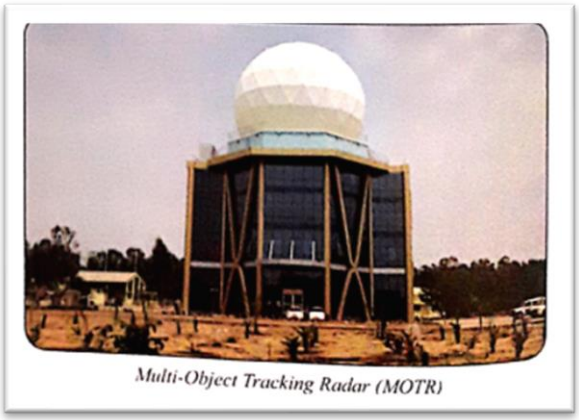
## RANGE OPERATION FACILITIES or (MCC)

The Range Instrumentation facilities comprise tracking. telemetry and telecommand systems. High precision radars track the launch vehicle.

Mission Control Centre (MCC)

Inside Mission Control Centre

PCMC Radar



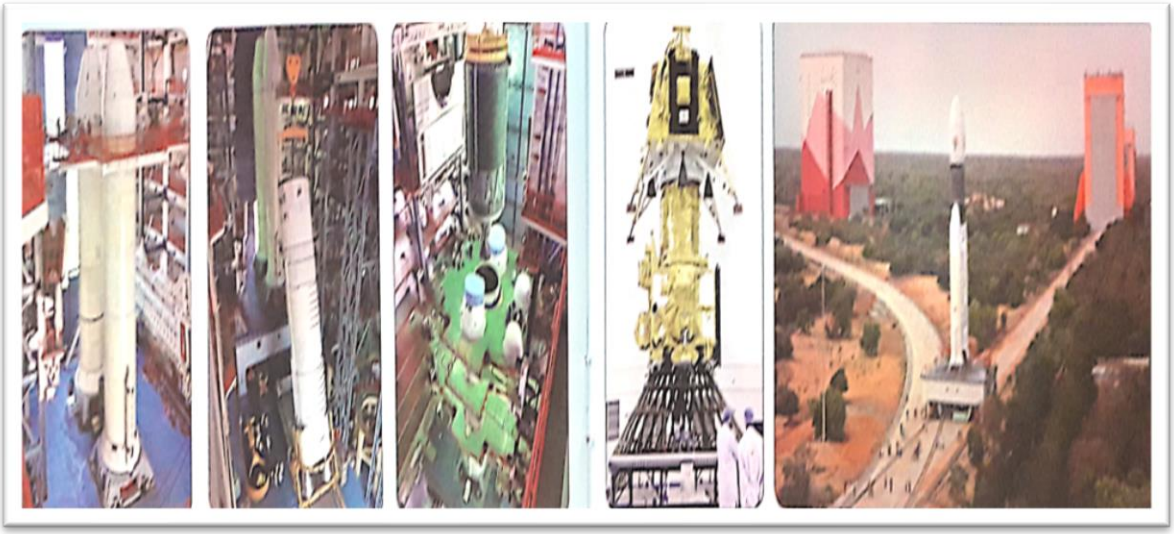
Multi-Object Tracking Radar (MOTR)

The vehicle position information is instantaneously computed in real time from the tracking data and is used for evaluating the performance of the vehicle. The performance data of various systems of the vehicle is acquired by telemetry ground stations.

The Mission Control Centre (MCC), situated about 6 km away from the launch complex, coordinates and conducts the launch operations during the countdown phase fill the injection of the satellite into orbit. Multi Object Tracking Radar (MOTR) is established with indigenous technology for tracking of the launch vehicles, spacecrafts in orbits, aircrafts and Space Debris.

## SECOND LAUNCH PAD

This is the location that we see every time a launch is broadcast on television. The rocket is assembled and brought to the launch pad. The rocket is electrically insulated from lightning by 4 lightning protection towers. These towers also house high resolution cameras at several levels



to monitor the various stages of the rocket. These cameras are protected by concrete enclosures. The launch pad itself is about 70m high. This means that the protection towers are even taller. An anchor is present to hold the rocket in place until the time of blast off. Separate pipes are present to deliver cryogenic fuels, which are supplied at 180 degrees Celsius. Finally, there are exhaust deflection ducts which deflect the exhaust gases through underground tunnels to a place which is a few tens of metres away. In case the flame returns to the rocket, balance will be lost and the rocket may topple.


The tunnels are filled with water to reduce pressure and temperature. Also, cryogenic fuel tanks are available in separate towers. Each floor in the launch pad is 4m high. This launch pad is called ‘umbilical’ due to the presence of the pipes which feed fuel to the rocket. Second Launch

Complex In order to provide additional facilities for launching operational PSLV's, GSLV's and also to have quick turnaround time for launch, an additional launch pad with associated facilities was constructed. It was designed to accommodate, both the present PSLVs and GSLVs, and heavy launch vachile configuration GSLV-MKILL.
This massive facility (52 m x 70 m x 96 m) is three times missions from SLP bigger than the present VAB at SLP.

## FIRST LAUNCH PAD

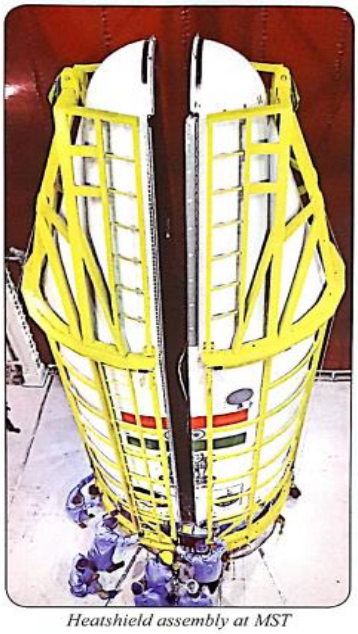
Unlike the ‘umbilical’ type, this is a pedestal type. The whole tower moves away from the rocket just before the blast off. As there is a PSLV launch in the next month and that process was taking place at the time, entry was denied and we were allowed to see this from a distance. The first launch pad and its associated facilities were built in the late 1980s, primarily for the PSLV launch requirements. Later, they have been modified for the GSLV launch requirements. It was built on the concept of 'Integrate on the Pad', according to which, the individual stages of launch vehicle are brought from their preparation facilities, one after the other and integrated one over the other on the launch pad itself.

The Mobile Service Tower (MST) equipped with foldable and vertically repositionable access platforms facilitates the integration activity. The spacecraft, which is checked thoroughly and fuelled at its preparation facilities arrives at the launch pad and gets integrated with the launch vehicle. A few hours before the launch, the MST is moved away from launch pad on a rail track. Separate storage, transfer and servicing facilities are available for earth storable liquid propellants such as UH25 and N, O, and cryogenic propellants such as Liquid Oxygen and Liquid Hydrogen. These propellants are fed into the onboard tanks through fluid circuits. The filling operations, which are automated, are controlled and monitored from the Launch Control Centre (LCC), situated 6 km away from the launch pad. A few hours before the launch, the MST, which weighs about 3200 tons moves slowly to its parking place on 32 wheels, 8 nos. in each corner, on a twin rail track leaving the launch vehicle on the launch pedestal.


Following the final remote checkout and fuelling operations, through the Umbilical tower which houses cable and pipe connections, exactly at 'T-O' of countdown the vehicle takes-off. As the National requirements of the number of launches are increased, Government of India approved the construction of Second Launch Pad (SLP) at SDSC SHAR. Now, FLP is also getting further augmented with PSLV Integration Facility (PIF) in another one year with which 12 to 15 PSLVs can be launched from the FLP itself. After the modifications carried out for PIF at FLP only the PSLVs can be launched from there and GSLVS can continue to fly from SLP.


*Integration of PSLV-C46 at MST - First Launch Pad*

*PS3 & PS4 integration*



*Heatshield assembly at MST*

*Withdrawal of MST*

*PSLV-C46 on Pad*

*PSLV-C46 Lift-off*

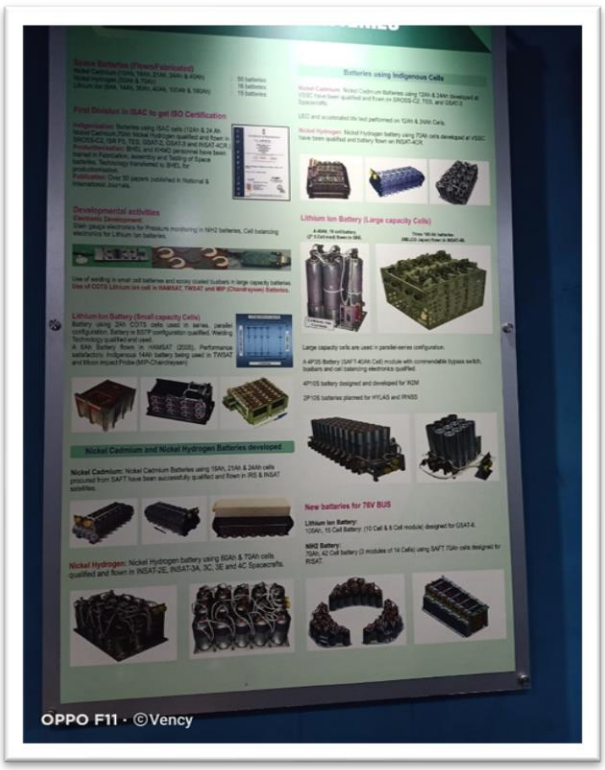
## SPACE MUSEUM

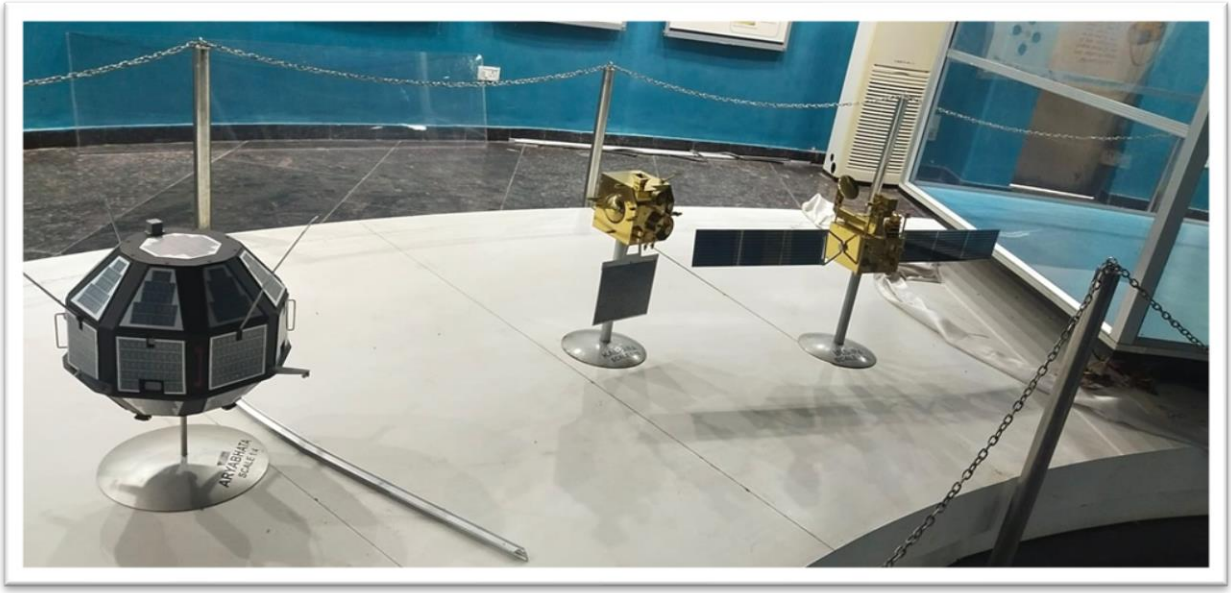
Space Museum provides a tell-tale account of the Indian Space Programme from its infancy. The story of the Indian Space Programme is unfurled in six sections, comprising of history, education, technology, applications, global and the future.

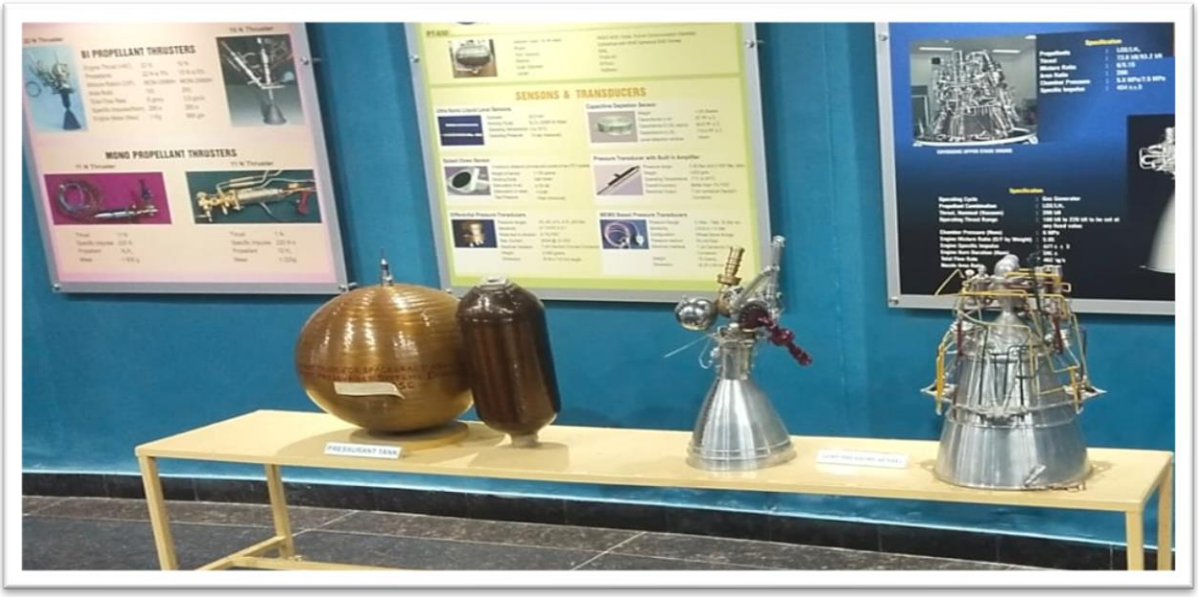


FUELLING OPERATIONS IN PROGRESS


PSLV
(Polar Satellite Launch Vehicle)
Shot on OnePlus
By Sameer


Batteries using Indigenous Cells
Lithium Ion Battery (Large capacity Cells)
Nickel Cadmium and Nickel Hydrogen Batteries developed
New batteries for 76V BUS
OPPO F11 · ©Vency




BI PROPELLANT THRUSTERS
MONO PROPELLANT THRUSTERS
SENSORS & TRANSDUCERS


'MARS Orb
32m DEEP SPACE ANTENNA
ELEVATION
AZIMUTH
MAINS


Stepping on Moon - A Giant Leap
TECHNICAL


SRIHARIKOTA


SAFETY DIVISION SDSC-SHAR
AI QUAD CAMERA
Shot by Vasu


SCAN MIRROR
RATE GYRO
REACTION WHEEL
PLEASE DO NOT TOUCH THE MODELS


Space Junk
Since the time that the first satellite (Sputnik) was launched in 1957, near space has become overcrowded with a large amount of debris. Satellite batteries that have exploded and parts of rockets and spacecraft still orbiting the Earth form a genuine cosmic garbage dump. These variously sized objects pose a damage that would be caused by a collision. The particles move at speeds of 30,000 to 70,000 km/h.
Space Junk
SIZE OF SPACE JUNK
OBJECTS IN SPACE BY COUNTRY
12,000+
What Can Be Done?
ORIGIN AND LOCATION
2,000


PSLV
(Polar Satellite Launch Vehicle)
GSLV
GSLV Mk III


AI QUAD CAMERA
2022/05/10 15:13



## STUDENTS SHARE SDSC-SHAR (ISRO), Sriharikota EXPERIENCE

Some of the students, share their one-day industrial visit to SDSC-SHAR (ISRO), Sriharikota experiences, they are B. Kameswari, P. Srivalli, M. Kavya Sree, P. Preethi Sushmita, M. Manila are shared their experiences on a one-day industrial visit to SDSC-SHAR (ISRO), Sriharikota. SDSC-SHAR visit in the form of a presentation on the purpose, utility and experience of the visit. Barnwal Apprised the students of various aspects of SDSC-SHAR visit. They said that SDSC-SHAR was established in Sriharikota island was chosen in 1969 for a satellite launching station. The centre became operational in 1971. Because It Located nearer to the equator, Sriharikota is the ideal launch site for geostationary satellites. Sriharikota is ideal for eastward launches. SHAR's location on the east coast ensures that it gains an additional velocity of 0.4 km/s due to Earth's rotation to easily launch rockets. “Its objective is to provide space related techniques for India. The SDSC-SHAR visit was quite enlightening and exciting. A lot of information related to the space was received from the excursion. Through, presentations, Guide lectures, and excursions, we get detailed information about India's space-related developments,” They said giving detailed information regarding Rocket Launching Pads, Satellites, Satellite Launch Vehicle, SLV, PSLV, GSLV-Mk II, Satellite Programme, Human Space Flight Programme, Mission Control etc.

## ASSEMBLY AND STATIC TEST AND EVALUATION COMPLEX

- Two buildings constitute the complex – the assembly building and the test buildings which are placed adjacent to each other. Motors which are in excess of 2m diameter are present and they are fabricated in Mumbai.

- At around 1.45. P.M., we had lunch at ARYABHATTA canteen facility at SHAR. After having our Lunch, at around 4.30 P.M.

- We also visit SLV and PSLV and SRC (sound) and we finally visited the Space Museum and the Library facility at SHAR. Here, we were allowed to take the Photographs, where we got an opportunity to know about the History of SHAR with the aid of many models related to the centre.

- At around 5.30 P.M. in the Evening, the visit was concluded and the students has started to return to Rajahmundry. enroute nellore, and reached Adikavi Nannaya University Rajahmundry on the next day morning at 8.00 A.M.

- We (all students and staff member/s) are very much thankful to the Prof. M Jagannadha Rao, Vice-Chancellor, Adikavi Nannaya University and Prof. T. Ashok Registrar of Adikavi Nannaya University and Prof. S Teki, Principal(I/C) of , Adikavi Nannaya University and Dr.V Persis, Principal of University College of Engineering, Adikavi Nannaya University and Asst Prof.,Mr. Sudha Kiran Head of Electronics and Communication Engineering Department for giving their valuable support.

- We are also very much thankful to Shri.V. Surendra kumar Scientist/Engineer-SF, Dy. Head, Systems Reliability Entity & Srinivas Reddy Scientist and and Radha kirshna /Lib Head and Gopi Krishna /PPO and other staff for their co-operation during the visit.

## SOME PHOTOGRAPHS DURING THE VISIT




❖ A News Paper Article regarding Adikavi Nannaya University, Engineering 3rd & 4th year Students visit to SDSC-SHAR (ISRO), Sriharikota

# శ్రీహరికోట సందర్శనకు ఇంజనీరింగ్ విద్యార్థులు


**09.05.22 (మీడియా సెల్)** ఆదికవి నన్నయ యూనివర్సిటీ కాలేజ్ ఆఫ్ ఇంజినీరింగ్ లోని ఎలక్ట్రానిక్స్ అండ్ కమ్యూనికేషన్ ఇంజనీరింగ్ విద్యార్థులు శ్రీహరికోటకు పారిశ్రామిక సందర్శనకు వెళ్ళారు. సోమవారం యూనివర్సిటీలోని పారిశ్రామిక సందర్శన యాత్రను రిజిస్ట్రార్ ఆచార్య టి.అశోక్, ఓ.ఎస్.డి ఆచార్య ఎస్.టేకి లు జెండాఊపి ప్రారంభించారు. పారిశ్రామిక సందర్శన యాత్ర వివరాలను ప్రిన్సిపాల్ డా.వి.పెర్సిస్ తెలియజేశారు. ఎలక్ట్రానిక్స్ అండ్ కమ్యూనికేషన్ ఇంజనీరింగ్ కోర్సు పాఠ్యప్రణాళికలలో భాగంగా పారిశ్రామిక సందర్శన యాత్రను నిర్వహిస్తున్నామన్నారు. శ్రీహరికోట స్పేస్ రీసెర్చ్ సెంటర్ ను సందర్శించేందుకు అనుమతి లభించిందని తెలిపారు. 81 మంది ఇంజినీరింగ్ విద్యార్థులు, అధ్యాపకులు పారిశ్రామిక సందర్శన యాత్రకు వెళ్తున్నారని చెప్పారు. ఇంజనీరింగ్ విద్యార్థులు శ్రీహరికోట స్పేస్ రీసెర్చ్ సెంటర్ ను సందర్శించి, అక్కడి విషయాలను పూర్తిగా అవగాహన చేసుకోవాలని తెలియజేశారు. భవిష్యత్తులో స్పేస్ రీసెర్చ్ కు సంబంధించిన ఇంజనీరింగ్ పరిజ్ఞానాన్ని పూర్తిగా అవగాహన చేసుకోవాలన్నారు. ఈ కార్యక్రమంలో అధ్యాపకులు విద్యార్థులు పాల్గొన్నారు.