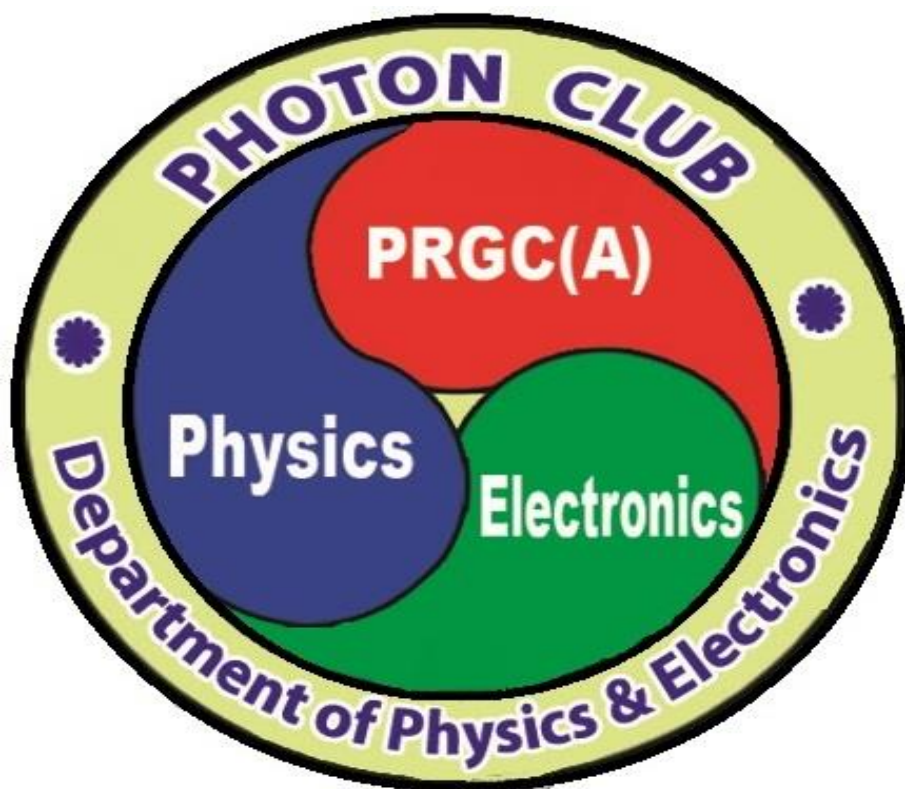


**PITHAPUR RAJAH'S GOVT. COLLEGE (A),  
KAKINADA**

**DEPARTMENT OF  
PHYSICS & ELECTRONICS**



**Report on  
Observation of Zero Shadow Day**

**05/08/2025**

**P.R. GOVERNMENT COLLEGE (A), KAKINADA**  
**DEPARTMENT OF PHYSICS & ELECTRONICS**

|                                                                        |                                                                                                                                                                                                                |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                                   | 05-08-2025                                                                                                                                                                                                     |
| Conducted through<br>DRC/JKC/ELF/ Dept. etc                            | Department of Physics & Electronics                                                                                                                                                                            |
| Nature of the Activity<br>(Seminar/Workshop/Extension<br>lecture etc.) | Co-Curricular Activity                                                                                                                                                                                         |
| Title of the Activity                                                  | Observation of Zero Shadow day                                                                                                                                                                                 |
| Name of the<br>Department/Committee                                    | Physics & Electronics                                                                                                                                                                                          |
| Details of Resource person<br>(Name, Designation etc.)                 |                                                                                                                                                                                                                |
| No. of Students Participated                                           | 50                                                                                                                                                                                                             |
| Brief Report of the Activity                                           | Department of Physics and Electronics conducted Zero Shadow Day experiment on 05/08/2025. Lecturer In charge of Physics & Electronics, Dr.M.Surekha, presided the program. Detailed report is enclosed inside. |
| Name of the lecturers who<br>planned and conducted the<br>activity     | Department of Physics & Electronics                                                                                                                                                                            |
| Signature of the Lecturer in<br>charge/<br>Convener of the committee   |                                                                                                                            |
| Signature of the Principal                                             | <br>Principal & In-charge Controller<br>P.R. Govt. College (Autonomous),<br>KAKINADA-533 001.                              |
| Remarks                                                                |                                                                                                                                                                                                                |

**P.R GOVERNMENT COLLEGE (A), KAKINADA**  
**DEPARTMENT OF PHYSICS & ELECTRONICS**  
**STAFF MEETING**

**Date: 01/08/2025**

A meeting is convened on 01/08/2025 at 4pm in the staff room to discuss the following points. All staff members are requested to attend the meeting without fail.

**Agenda:**

1. Observation of Zero Shadow Day on 05/08/2025.
2. Observation of Hiroshima Day on 06/08/2025 and Nagasaki Day on 09-08/2025.
3. Board of Studies meeting for the AY 2025-26 on 07-08-2025.
4. Interaction session and career guidance program to II & III Renewable energy and management students on 07/08/2025.

M. Surebha

**In charge**  
**Physics & Electronics**

**Circulated to:**









  
A. Paul





**Resolutions:**

1. It is discussed and resolved to observe Zero Shadow Day on 05/08/2025.
2. It is discussed and resolved to conduct Elocution competitions to the students on the eve of Hiroshima Day on 06/08/2025 and Nagasaki Day on 09/08/2025.
3. It is discussed and resolved to conduct BOS meeting for UG Physics, Electronics, Renewable energy and management on 07/08/2025.
4. It is discussed and resolved to organise an interaction session with Sri. A. V. V. Prasad, Solar systems, Kakinada for II & III Renewable energy and management students on 07/08/2025.

M. Surekha

In charge

Physics & Electronics

**Members Present:**



S. M. M. D

A. S. K

K. P. M



A. K. M

P. M. D



**Report of the Activity**

Zero Shadow Day happens twice a year. Department of Physics and Electronics conducted Zero Shadow Day experiment on 05/08/2025. Lecturer In charge of Physics & Electronics, Dr. M. Surekha, presided the program. She created awareness to students regarding Zero shadow day. In every year it falls twice at different places at different times around the globe. This practical session gave a valuable information to the students regarding the Solar System and Solar Constant which appears in the curriculum of their Paper for II PHYSICS(H),

students, “Thermodynamics & Radiation Physics”. Faculty and students of Physics and Electronics Department attended for the experiment.

### **What is Zero Shadow Day**

Zero Shadow Day is a phenomenon where the sun is directly overhead, causing vertical objects to cast no shadow for a few minutes because the sun's rays hit the Earth perpendicular to the surface. This occurs twice a year in locations between the [Tropic of Cancer](#) and the [Tropic of Capricorn](#) and is caused by the Earth's axial tilt. The dates vary depending on latitude, but the sun's rays fall straight down, and the shadow is cast directly underneath the object.

### **What happens**

- **Sun is directly overhead:**

The sun reaches its highest point in the sky, called the zenith, directly above a specific location.

- **No shadow is cast:**

The sun's rays fall perpendicular to the ground, meaning the shadow is cast directly beneath the object, making it appear invisible.

- **It lasts for a few minutes:**

The effect is temporary and can be observed for a short period around solar noon.

### **Why it happens**

- **Sun's declination:**

The sun's declination (its angle north or south of the celestial equator) becomes equal to the latitude of the location on these specific days, leading to the sun being directly overhead.

- **Varying dates:**

The phenomenon occurs twice a year, with the dates changing based on your specific latitude within the tropics.

### **Where it occurs**

- **Between the tropics:**

You can only observe this event in regions located between the Tropic of Cancer and the Tropic of Capricorn.

- **Examples:**

Indian cities like Chennai, Mumbai, and Pune are within this zone and have experienced Zero Shadow Day, while New Delhi, which is further north, has not.

### **Historical significance**

- **Ancient observations:**

Ancient civilizations used this phenomenon for agricultural and calendrical purposes.

- **Measuring Earth's circumference:**

The Greek mathematician [Eratosthenes](#) used the difference in shadow length between two cities on a Zero Shadow Day to calculate the circumference of the Earth using geometry and trigonometry.

# **GALLERY**



**Staff & students observing Zero shadow day**



# **List of Participants**

| Participants list |                          |                               |
|-------------------|--------------------------|-------------------------------|
| S.No.             | Name of the student      | Year & Group                  |
| 1.                | Y. Anitha                | II <sup>nd</sup> BSc physics  |
| 2.                | V.V.R. Sai Sri Devi      | II <sup>nd</sup> BSc physics  |
| 3.                | P. Leha Sri              | II <sup>nd</sup> BSc physics  |
| 4.                | K. Seetha Maha lakshmi   | II <sup>nd</sup> BSc phy.     |
| 5.                | M. Vijaya Durga          | II <sup>nd</sup> BSc phy      |
| 6.                | G. udhya Sri             | II <sup>rd</sup> BSc REM      |
| 7.                | G. B.V. Siva             | III <sup>rd</sup> BSc phy     |
| 8.                | A. Syamala Rani          | "                             |
| 9.                | K. Ramyasai              | "                             |
| 10.               | N.S.R. Senthosha         | "                             |
| 11.               | K. Gayatri devi          | "                             |
| 12.               | D. Vijaya                | "                             |
| 13.               | T. Bhargavi              | "                             |
| 14.               | N. Alchila               | III <sup>rd</sup> (REM)       |
| 15.               | A.N.D. Ishwari           | II <sup>nd</sup> BSc phy      |
| 16.               | P.L.V. Sameswari         | "                             |
| 17.               | K. Lohitha               | II <sup>nd</sup> BSc Phy      |
| 18.               | D. Krishna Uma maheswari | "                             |
| 19.               | M. Lakshmi Sri           | II <sup>nd</sup> BSc phy      |
| 20.               | K. S.I.V. prathna        | "                             |
| 21.               | D. Anusha                | "                             |
| 22.               | K. Durga Madhuri         | "                             |
| 23.               | M. Mounika               | "                             |
| 24.               | M. Naga Mani             | "                             |
| 25.               | J. Kartika               | II <sup>nd</sup> BSc phy      |
| 26.               | B. Chiranjeevi           | "                             |
| 27.               | T. Bhargavi              | III <sup>rd</sup> BSc physics |
| 28.               | K. Seetha Mahalakshmi    | II <sup>nd</sup> BSc physics  |
| 29.               | K. Lohitha               | II <sup>nd</sup> BSc Physics  |
| 30.               | M. vijaya durga          | II <sup>nd</sup> B.Sc physics |
| 31.               | V.V. Sai Sri Devi        | "                             |
| 32.               | P. Somena                | "                             |
|                   |                          | Signature                     |
|                   |                          | Y. Anitha                     |
|                   |                          | V. Sri Devi                   |
|                   |                          | P. Leha Sri                   |
|                   |                          | K. Seetha                     |
|                   |                          | M.V. Durga                    |
|                   |                          | G. udhya Sri                  |
|                   |                          | G.B.V. Siva                   |
|                   |                          | A. Syamala Rani               |
|                   |                          | K. Ramya                      |
|                   |                          | N. Sathya                     |
|                   |                          | K. Gayatri                    |
|                   |                          | Vijaya                        |
|                   |                          | Bhargavi                      |
|                   |                          | Alchila                       |
|                   |                          | A.N.D. Ishwari                |
|                   |                          | P.L.V. S.                     |
|                   |                          | K. Lohitha                    |
|                   |                          | D.K.U. maheswari              |
|                   |                          | M. Lakshmi Sri                |
|                   |                          | K. prathna                    |
|                   |                          | D. Anusha                     |
|                   |                          | Madhuri                       |
|                   |                          | Mounika                       |
|                   |                          | Mani                          |
|                   |                          | Kartika                       |
|                   |                          | B. Chiranjeevi                |
|                   |                          | T. Bhargavi                   |
|                   |                          | K. Seetha                     |
|                   |                          | K. Lohitha                    |
|                   |                          | M.V. Durga                    |
|                   |                          | V.V.S.S. Devi                 |
|                   |                          | P. Somena                     |

|    |                          |   |                       |
|----|--------------------------|---|-----------------------|
| 32 | K.D. Madhuri             | " | Madhuri               |
| 34 | J. Soetha                | " | J. Soetha             |
| 35 | K. Kumar Varma           | " | K. K. K. Varma        |
| 36 | M. Sri Ram               | " | M. Sri Ram            |
| 37 | P. Uma Maheswari         | " | P. Uma                |
| 38 | A. V. S. S. Krishna      | " | A. Krishna            |
| 39 | K. Durga Subbun          | " | K. Durga              |
| 40 | M. Surya Narayana        | " | M. Surya              |
| 41 | P. Ashu veer Gangadhar   | " | P. Ashu               |
| 42 | S. Koteshwara            | " | S. Koteshwara         |
| 43 | K. Anand Kumar           | " | K. A                  |
| 44 | S. Adikesava Reddy       | " | S. A                  |
| 45 | J. Suresh                | " | J. Suresh             |
| 46 | T. Sivamani              | " | T. Sivamani           |
| 47 | Y. Ajesh                 | " | Y. Ajesh              |
| 48 | CH. Krishna Prasad       | " | CH. Krishna           |
| 49 | M. Karuna Sri            | " | M. K. Sri             |
| 50 | K. S. L. V. Prassanna    | " | K. S. L. V. Prassanna |
| 51 | D. Anusha                | " | D. Anusha             |
| 52 | D. Krishna Uma Maheswari | " | D. K. U. Maheswari    |
| 53 | P. S. R. S. Krishna Vasu | " | P. S. R. S. K. Vasu   |
| 54 | K. Lohitha               | " | K. Lohitha            |
| 55 | P. Soma                  | " | P. Soma               |
| 56 | Y. Anitha                | " | Y. Anitha             |
| 57 | V. V. Sai Sai Reddy      | " | V. V. Sai Sai Reddy   |
| 58 | P. Prashna               | " | P. Prashna            |
| 59 | M. Sai Ram               | " | M. Sai Ram            |

M. Suresh