GOKHALE MEMORIAL GIRLS' COLLEGE

1. **Name of the Seminars/conferences/workshops:** Pedagogical Lecture on "**Monstrous Black Hole**"
2. **Organized by:** Department of Physics, Gokhale Memorial Girls' College.
3. **Aim of the Seminars/conferences/workshops (within 100 words):**
   To impart the idea and concept of Black hole among the students and acquainted with the fascinating subject Department of Physics arranged a lecture by Prof. (Dr.) Tapas Das, a renowned scientist in this field.
4. **Date :** 25th April, 2023, **Time** : 2:00 pm, **Venue** : LT-4, Science Building
5. **Duration in hours (approximate):** $2\frac{1}{2}$ **hours**
6. **Number of Participants (approximate):** 42
7. **Name of Speakers with title of their speech, designation and Affiliation:**
   Title of the Talk: Pedagogical Lecture *On* "**Monstrous Black Hole**" **Speaker: Dr. Tapas Das,** Professor of Physics, Harish-Chandra Research Institute Prayagraj (Allahabad), India
8. **Outcome of the Seminars/conferences/workshops:**

Prof. Das started with introducing the fundamental building block of the universe which are mainly galaxies of various shapes and sizes. He then discussed the mechanism behind making the galaxies luminous which are mainly thermonuclear fusion reactions. The discovery of quasar 3C273 however refuted the fundamental law that all the stars and galaxies are powered by thermonuclear (fusion) reactions. 3C273 was found to be extremely radio-luminous with enormous energy output of 10^{46} ergs/s. What feeds such power houses !! 3C273 was considered an active galactic nucleus powered by a huge *black hole* of mass of the order of several million solar masses. Black holes were discovered by Sir Roger Penrose through General Theory of Relativity (GTR). It is considered as a singularity in space-time. The question that interests everyone is *how to observe black holes* as nothing can come out of the event horizon. Prof. Das finally concluded by mentioning that there are huge black holes sitting at the centre of the host galaxies with surrounding matter falling onto its centre.This is known as accretion of matter into black holes which results in huge gravitational potential energy; a part of which gets converted to electromagnetic radiation. Any information regarding the black hole could be obtained from the emergent electromagnetic spectrum. It is a common perception that black holes have a strong gravitational field that even light can't escape. So the electromagnetic spectrum which could provide us the information regarding presence of a black hole is essentially obtained from regions beyond the event horizon.

After such an enlightening talk, the students came up with their questions and Prof. Das patiently responded to all. It was really overwhelming to see the enthusiasm and inquisitiveness of students from all science backgrounds. All the participants were given e-certificates.

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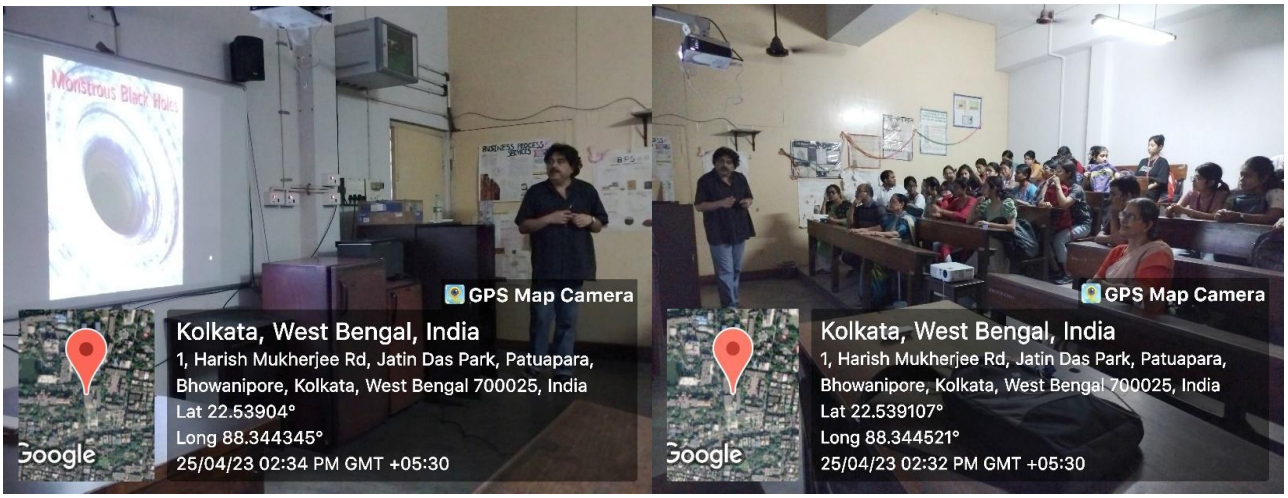

Glimpses of the lecture session