PS01-ISTE: AstroView — Understanding Space Through Actionable Data

CONTEXT

In recent years, space exploration and satellite technologies have progressed rapidly, producing massive volumes of real-time data about celestial events, space missions, and cosmic conditions. This information contributes not only to scientific advancement but also supports practical applications such as climate monitoring, disaster management, agricultural planning, and environmental analysis.

However, this data remains fragmented, highly technical, and difficult for students, educators, enthusiasts, and the general public to access and understand. Information about missions is scattered across multiple agencies and platforms. Time-sensitive sky events such as meteor showers, satellite passes, aurora visibility, and planetary alignments are frequently missed due to the lack of a unified, localized, and user-friendly information source.

Furthermore, the connection between satellite data and its real-world impact on Earth is rarely communicated in an intuitive and engaging manner. As a result, a gap exists between the availability of space data and the public's ability to interpret, learn from, and benefit from it, limiting curiosity, education, and awareness.

To bridge this gap, there is a need for a system that transforms complex, scattered space data into meaningful, accessible, and actionable insights for everyday users.

CHALLENGE

Solution Design

Build an interactive platform where:

- Users can access centralized information about celestial events and space missions.
- The system provides localized and time-sensitive alerts for observable sky events.
- Complex satellite and astronomical data is converted into simple visual explanations.
- The platform connects space data to real-world applications such as climate, agriculture, and disaster awareness.
- The experience encourages learning and engagement for non-expert users.

IMPORTANT NOTES

- The application must be easy to understand for users without scientific backgrounds.
- It should support educational usage for students and teachers.
- Include features such as event notifications, visualizations, and simplified explanations.
- Ensure reliable and clear presentation of data without overwhelming the user.

TECHNOLOGY BASELINE

Assume users have access to internet connectivity and smart devices capable of receiving notifications and displaying interactive visual content.

OUTCOME

A functional prototype that centralizes space-related information into an accessible and educational platform.
The system should enable users to discover celestial events, understand their significance, and recognize how space technology impacts everyday life.
The solution should enhance curiosity, improve scientific awareness, and provide an engaging learning experience for users of all ages.