भारतीय खगोलभौतिकी संस्थान
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स्नातक अध्ययन मंडल Board of Graduate Studies.

Visiting Student's Programme Seminar

Title: Investigating the Dynamic Small-Scale Coronal Loops

Speaker: Mr. Poulastya Pratim Mandal
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सार Abstract

Recent observations from the Solar Orbiter have revealed that small loop-like structures are commonly found in the quiet solar corona. These are often referred to as coronal campfires or unresolved fine loops. Although they are abundant, the mechanisms behind their formation and behavior are still not fully understood. In this study, we analyze these loops using data from the HRIEUV telescope on the Solar Orbiter, recorded at a heliocentric distance of 0.426 AU from the Sun. These loops typically measure between 1.4 and 10.8 Mm in length and can reach heights of 0.5 to 4.2 Mm. They have lifetimes ranging from 112 to 568 seconds and widths of about 0.5 Mm. Our analysis reveals plasma movements within the loops at speeds ranging from 16 to 98 km/s. Many of these loops display asymmetric footpoint brightenings and are associated with transient jet-like activities, suggesting that energy may be deposited suddenly through impulsive heating or reconnection processes. These findings reinforce the idea that dynamic small-scale loops play a significant role in coronal heating and contribute to the complex transport of energy and mass within the lower solar atmosphere.

शुक्रवार Friday 18, जुलाई July 2025

Time: 11:30 AM

प्रेक्षागृह Auditorium

सभी का स्वागत है All are welcome.