

[<https://doi.org/10.69646/aob250934>]

[Abstract]

Solar Observations from Ground and Space: A Comparative Study of Data from Istanbul University Observatory and SOHO

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Abstract: In this study, ground-based solar observations conducted at Istanbul University Observatory and space-based data obtained from the SOHO (Solar and Heliospheric Observatory; Domingo et al. 1995) spacecraft were comparatively analyzed over a defined time interval. The analysis utilized photospheric images and sunspot counts from both data sources. The ground-based observations from Istanbul University provide a valuable long-term dataset for monitoring solar activity, while SOHO's space-based observations offer high spatial and temporal resolution, enabling detailed tracking of short-term and dynamic solar phenomena. The study focused on the temporal distribution, morphology, and relative counts of sunspots from both datasets. Results indicate that ground and space-based observations complement each other effectively. The combined use of historical ground-based data and modern space telescope measurements offers significant advantages in solar activity studies. This integrated approach enhances understanding of solar magnetic field variations and contributes to improved modeling of solar-terrestrial interactions.

Keywords: Solar observations, Sunspots, SOHO, Ground-based telescopes

References

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