

COSPAR Abstract

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The Evolution of Transition Region Loops Using IRIS and AIA

Over the past 50 years, the model for the structure of the solar transition region has evolved from a simple transition layer between the cooler chromosphere to the hotter corona to a complex and diverse regions that is dominated by complete loops that never reach coronal temperatures. The IRIS slitjaw images show many complete transition region loops. Several of the "coronal" channels in the SDO AIA instrument include contributions from weak transition region lines. In this work, we combine slitjaw images from IRIS with these channels to determine the evolution of the loops. We develop a simple model for the temperature and density evolution of the loops that can explain the simultaneous observations. Finally, we estimate the percentage of AIA emission that originates in the transition region.