

**Space Science Seminar**  
**Thursday, 2017 March 30**  
**10:30 a.m.**  
**NSSTC/4078**  
**Why is the Solar Corona So Hot?**

Dr. James A. Klimchuk / NASA Goddard Space Flight Center (GSFC)  
Host: Dr. Sanjiv K. Tiwari (ST13)

This fundamental question has challenged space scientists for decades. At temperatures of several million degrees, the corona is three orders of magnitude hotter than the solar surface, so heat cannot simply flow upward against the temperature gradient. (The same is true on other stars.) It is widely believed that the energy responsible for the extreme temperatures is extracted from the stressed magnetic fields that permeate the corona. The details of how this occurs are still, however, a matter of vigorous debate. It is likely that the mechanisms involved play a fundamental role in a wide range of phenomena, both on the Sun and beyond. During this talk, I will review our current understanding of the coronal heating problem and offer my own thoughts on its solution.

**Dr. Klimchuk Biography**

James Klimchuk is a research astrophysicist in the Heliophysics Division at NASA's Goddard Space Flight Center. He uses a combination of theory, numerical simulation, and data analysis to study the Sun, especially its outer atmosphere called the corona. He is perhaps best known for his work on explaining why the corona is so hot.

Dr. Klimchuk has held numerous elected and appointed leadership positions, including President of the Space Physics and Aeronomy Section of the American Geophysical Union, Chair of the Solar Physics Division of the American Astronomical Society, and President of Commission 10 of the International Astronomical Union. He has served on many committees and panels for NASA, NSF, and DoD. Most recently, he chaired the committee that advises NASA on Solar and Heliospheric Physics, the SH-MOWG.

Dr. Klimchuk is an Honorary Fellow of the Royal Astronomical Society and recipient of Goddard's John C. Lindsay Memorial Award for Space Science and NASA's Outstanding Leadership Medal. He earned a BA in physics from Kalamazoo College and a PhD in astrophysics from the University of Colorado in 1985. He worked at Stanford University and the Naval Research Laboratory before joining NASA.

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