

## **COLLAGE Course 2023**

### **ASEN-5519-007,008: Space Weather Overview**

#### **Location and Time:**

AERO N250 and Zoom:

Wed 1:00 - 2:15 PM MDT (Jan 18 – May 3)

Office hour: TBD

#### **Course Coordinator:**

Yang Wang ([yang.wang-2@colorado.edu](mailto:yang.wang-2@colorado.edu)), AERO 415

#### **Course webpage:**

<https://nso.edu/students/collage/collage-2023/>

### **1. Overview**

This hybrid course is the 10<sup>th</sup> offering of the *George Ellery Hale Collaborative Graduate Education (COLLAGE)* program, a joint effort between CU Boulder, the National Solar Observatory (NSO), the New Jersey Institute of Technology (NJIT), the University of Hawai'i (UH), New Mexico State University (NMSU), Montana State University (MSU), and the High Altitude Observatory (HAO).

This semester's COLLAGE is a 2-credit seminar-based graduate course, with a focus on space weather. At CU, it is offered as ASEN-5519-007 and ASEN-5519-008 (remote), and we will also hold synchronous zoom sessions to join together everyone at all of the participating institutions and have interactions through Slack (<http://collage2023-asen5518.slack.com>).

Space weather refers to the dynamic conditions of the near-Earth environment and, in particular, its interaction with solar emissions and impacts on our technological infrastructure and society. Most of the space weather storms originated from solar eruptions, such as solar flares and coronal mass ejections, which can disturb the Earth's magnetosphere, ionosphere, and the upper atmosphere. These disturbances can cause problems with radio communications, satellite navigation (such as GPS), power grids, and in-orbit satellites. In this course, we will provide a series of seminars on selected topics about the space weather origin, impacts, observation, and forecast.

The goal of this course is to give an overview of the current studies on space weather, introduce the tools and data sources, and spark interest in space weather research.

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- Daglis, I. A. (Ed.). (2001). Space storms and space weather hazards (Vol. 64). Springer Science & Business Media.
- Schrijver, K., Bagenal, F., Bastian, T., Beer, J., Bisi, M., Bogdan, T., ... & Zapp, N. (2019). Principles Of Heliophysics: a textbook on the universal processes behind planetary habitability. arXiv preprint arXiv:1910.14022.

### 3. Schedule of Topics

The seminar information listed here will be updated as the dates get closer.

1.	01/18	The structure and diagnostics of the solar atmosphere (Kevin Reardon)
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2.

Follow-up discussions ..... 30%  
Student presentation ..... +20%

**5. University Policies**

6.1 Classroom Behavior

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral

Information about university policies, reporting options, and the support resources can be found on the OIEC website.

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about their rights, support resources, and reporting options. To learn more about reporting and support options for a variety of concerns, visit Don't Ignore It.

## 6.6 Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal