

## 2022 Boulder Space Weather Summer School: WEEK 1

Time	Mon., July 18th	Tue., July 19th	Wed., July 20th	Thu., July 21st	Fri., July 22nd
9:00-9:50	<b>Welcome and Overview</b> <i>Stan Solomon / Wendy Hawkins</i>	<b>MHD &amp; the Physics of Space Plasmas</b> <i>(Jeff Hughes)</i>	<b>The Solar Atmosphere</b> <i>(Steve Cranmer)</i>	<b>Solar Flares</b> <i>(Courtney Peck)</i>	<b>Coronal Mass Ejections (CMEs)</b> <i>(Joan Burkepile)</i>
9:50-10:05	Break				
10:05-10:55	<b>Intro to Space Weather Effects &amp; Economic Impacts</b> <i>(Howard Singer)</i>	<b>Numerical Methods for Simulating Space Plasmas</b> <i>(Steve Cranmer)</i>	<b>The Solar Wind &amp; Interplanetary Magnetic Field</b> <i>(Jeff Hughes)</i>	<b>Solar Energetic Particles (SEPs)</b> <i>(Brian Kress)</i>	<b>Space Weather Indices</b> <i>(Jeff Hughes)</i>
10:55-11:10	Break				
11:10-12:00	<b>Overview of Space Weather Modeling</b> <i>(Jeff Hughes)</i>	<b>Solar Magnetism</b> <i>(Mark Miesch)</i>	<b>Modeling the Solar Wind &amp; IMF with WSA-ENLIL</b> <i>(Elana Provornikova: Remotely)</i>	<b>Radiation Hazards to Astronauts and Aviation</b> <i>(Rob Steenburgh)</i>	<b>Forecasting Space Weather at SWPC</b> <i>(Rob Steenburgh)</i>
12:00-1:00	Working Lunch – Round Table Discussions				
1:00-1:30	Answers to Questions from Morning Sessions				
1:30-2:30	<b>Lab 1: Intro to Visualization</b> <i>(Nick Gross)</i>	<b>Lab 2: Exploring the Structure of the Solar Magnetic Field</b> <i>(Gross)</i> & intro to CCMC	<b>Lab 3: Sources of the Solar Wind</b> <i>(Gross)</i>	<b>Lab 4: Exploring the Structure of the Solar Wind</b> <i>(Gross)</i>	<b>Lab 5: Predicting the Arrival of CMEs at Earth</b> <i>(Gross)</i>
2:30-2:45	Break				
2:45-4:30	Lab Continues				
	Reception	SW 101 (Reality)	SW 102 (Harsh Reality)	SW 103 (Virtual Reality)	

## 2022 Boulder Space Weather Summer School: WEEK 2

Time	Mon., July 25th	Tue., July 26th	Wed., July 27th	Thu., July 28th	Fri., July 29th
9:00-9:50	<b>Magnetospheric Structure</b> <i>(Mike Wiltberger)</i>	<b>Geomagnetically Induced Currents &amp; Effects on Ground-Level Infrastructure</b> <i>(Jeff Love)</i>	<b>Thermosphere Structure</b> <i>(Stan Solomon)</i>	<b>Ionospheric Storms</b> <i>(Naomi Maruyama)</i>	<b>Capstone Project: Analysis of a Real Space Weather Event</b>
9:50-10:05	Break				
10:05-10:55	<b>Magnetospheric Storms &amp; Substorms</b> <i>(Jeff Hughes)</i>	<b>Radiation Belts: Observations &amp; Impacts</b> <i>(Howard Singer)</i>	<b>Ionosphere Structure</b> <i>(Stan Solomon)</i>	<b>Storm Impacts on Navigation &amp; Communication</b> <i>(Tzu-Wei Fang)</i>	<b>Capstone Project: Analysis of a Real Space Weather Event</b> <i>(continued)</i>
10:55-11:10	Break				
11:10-12:00	<b>Magnetospheric Models</b> <i>(Mike Wiltberger)</i>	<b>Radiation Belts: Models</b> <i>(Scott Elkington)</i>	<b>Magnetosphere-Ionosphere Coupling</b> <i>(Kevin Pham)</i>	<b>The Aurora</b> <i>(Stan Solomon)</i>	<b>Capstone Project: Analysis of a Real Space Weather Event</b> <i>(continued)</i>
12:00-1:00	Working Lunch – Round Table Discussions				
1:00-1:30	Answers to Questions from Morning Sessions				
1:30-2:30	<b>Lab 6: Exploring the Magnetosphere</b> <i>(Nick Gross &amp; Mike Wiltberger)</i>	<b>Lab 7: TBD</b>	<b>Lab 8: Satellite Drag</b> <i>(Gross)</i> <i>(HAO Dir. Visits for Lunch)</i>	<b>Lab 9: Exploring the Ionosphere &amp; Thermosphere</b> <i>(Gross/Solomon)</i>	<b>Wrap-up Session, Student Feedback, and Survey</b>
2:30-2:45	Break				
2:45-4:30	Lab Continue				
	<b>SW 101 (Reality)</b>	<b>SW 102 (Harsh Reality)</b>	<b>SW 103 (Virtual Reality)</b>	<b>Dinner</b>	