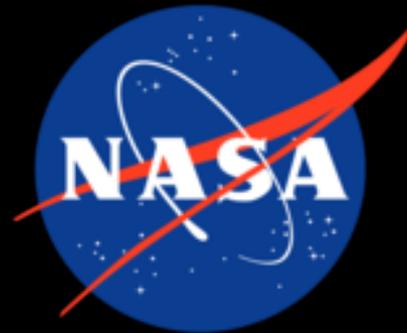


Polarimeter to Unify the Corona and Heliosphere



PUNCH Science Update

Sarah Gibson
Project Scientist



PUNCH 2nd Public Science Workshop
August 9-11, 2021
Virtual Reality





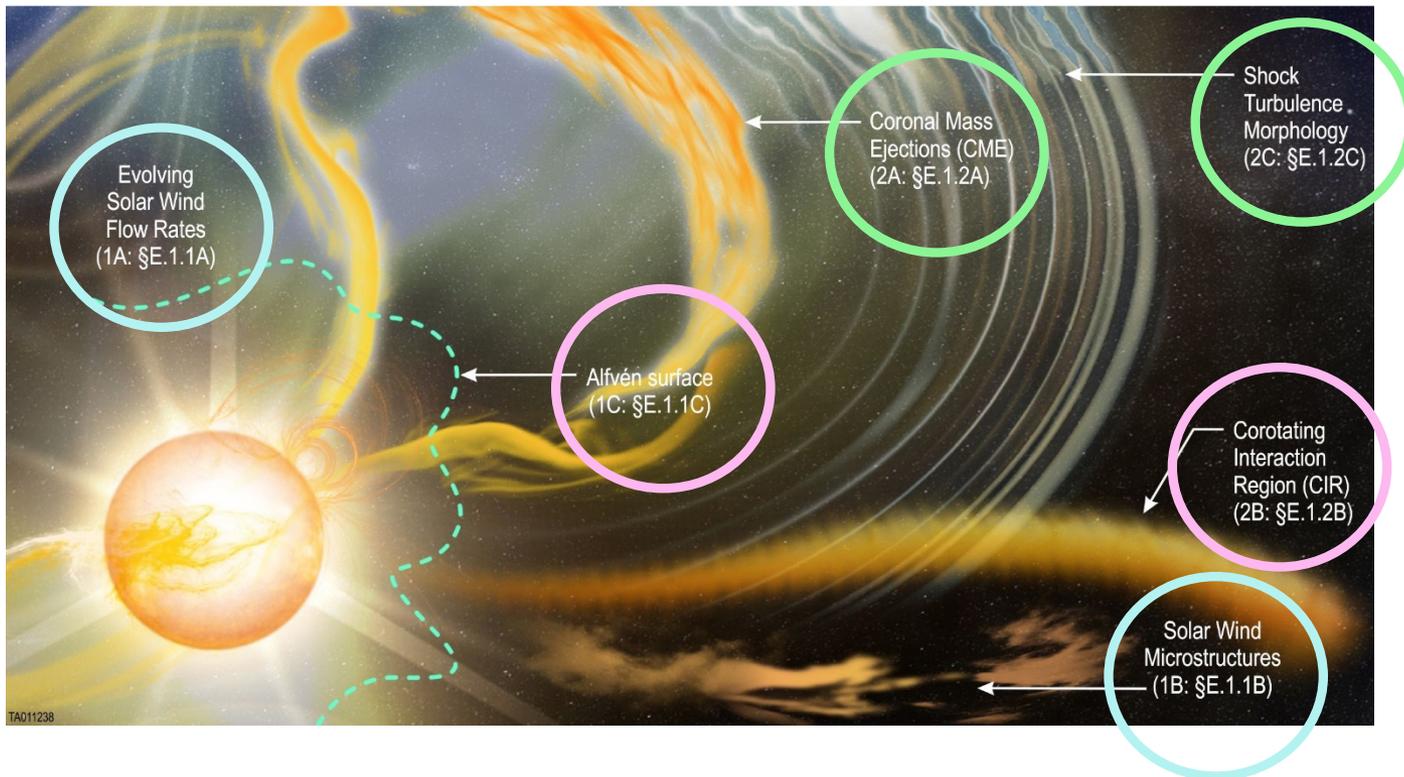
Purpose of Meeting

- Science goal and objectives
 - Organized via working groups
- Science update
 - Tools under development (by team and community)
- How to build and train a community
 - Outreach
 - STEAM
 - Associate Investigators
 - Community Data and Modeling Resources



PUNCH Science Goal and Objectives

PUNCH's primary **science goal** is to comprehend the cross-scale physical processes – from microscale turbulence to the evolution of global-scale structures – that unify the solar corona and heliosphere.



The PUNCH science goal is central to unifying heliophysics as a discipline.



The Global Evolving Solar Wind / Microstructures and Turbulence

MONDAY

Remember, all times PDT!!!!

- WG1A: How does the young solar wind flow and evolve on global scales?
- WG1B: Where and how do microstructures and turbulence form in the solar wind?

8:20 - 8:50	WG1A: The Global Evolving Solar Wind	
8:20 - 8:30	WG1A introduction/update	Barbara Thompson
8:30 - 8:50	Solar Wind Statistical Relationships Useful for Providing Analysis Constraints and Additional Space Weather Data Products	Heather Elliott
8:50 - 9:20	WG1B: Solar Wind Microstructures and Turbulence	
8:50 - 9:00	WG1B introduction/update	Nicholeen Viall
9:00 - 9:20	How Does Coronal Magnetic Reconnection Generate Solar Wind Structures and What Will PUNCH See?	Aleida Higginson



Heliospheric Boundaries and CIRs

TUESDAY

Remember, all times PDT!!!!

- WG1C: What are the evolving physical properties of the Alfvén surface?
- WG2B: How do quasi-stationary corotating interaction regions (CIRs) form and evolve?

8:40 - 9:10	WG1C: Alfvén Zone - Boundary of the Heliosphere	
8:40 - 8:50	WG1C introduction/update	Steven Cranmer
8:50 - 9:10	Insights from 3D Simulations, Remote Imaging, and PSP Data on the Location and Dynamics of the "Corrugated" Alfvén Zone (Scene-setting Talk)	Rohit Chhiber
9:10 - 9:40	WG2B: CIR Formation and 3D Dynamics	
9:10 - 9:20	WG2B: introduction/update	Curt de Koning
9:20 - 9:40	CIR observations in the PUNCH era	Vic Pizzo



CMEs and Shocks

WEDNESDAY

Remember, all times PDT!!!!

- WG2A: How do coronal mass ejections (CMEs) propagate and evolve in the solar wind?
- WG2C: How do shocks form and interact with the solar wind across spatial scales?

8:40 - 9:10	WG2A: CME Trajectory, 3D Structure and Evolution	
8:40 - 8:50	WG2A introduction/update	Anna Malanushenko
8:50 - 9:10	The State of Research on Coronal Mass Ejections and What PUNCH Can Do About it	Angelos Vourlidas
9:10 - 9:40	WG2C: Shock 3D Dynamics and Morphology	
9:10 - 9:20	WG2C introduction/update	Mihir Desai
9:20 - 9:40	Particle Acceleration at Shocks from the Sun to 1AU: The Importance of the Magnetic Field	Joe Giacalone



Informal presentations and plenary discussions

MONDAY

9:35 - 11:30	Session 2 Chairs: Barbara Thompson, Nicholeen Viall
9:35 - 10:20	Plenary free discussion
10:40 - 11:30	<p>Session: The Global Evolving Solar Wind; Microstructures and Turbulence</p> <p>Flow tracking summary + announcement from Valmir Moraes Filho and Vadim Uritsky on flow tracking challenge</p> <p>Informal presentation/discussions (1-3 slides) <i>(Click on a presenter name below to see the abstract)</i></p> <p>Lakshmi Pradeep Chitta</p> <p>Valmir Moraes Filho</p> <p>Richard Morton</p> <p>Roger Scott</p> <p>Samuel Van Kooten</p>
11:30 - 11:40	Break
11:40 - 1:00	Session 3 Chairs: Barbara Thompson, Nicholeen Viall
11:40 - 12:30	<p>Session (continued): The Global Evolving Solar Wind; Microstructures and Turbulence</p> <p>Informal presentation/discussions (1-3 slides)</p> <p>Thomas Chen</p> <p>Alec Engell</p> <p>Open discussion regarding SHINE style talks, Scene setting talks from morning, flow tracking and any other topics someone wants to bring up</p>

Remember, all times PDT!!!!

TUESDAY

9:55 - 11:40	Session 5 Chairs: Steven Cranmer, Curt de Koning
9:55 - 10:40	Plenary free discussion
10:40 - 11:30	<p>Session: Heliospheric Boundaries and CIRs</p> <p>Informal presentation/discussions (1-3 slides)</p> <p>William H. Matthaeus</p> <p>Thanassis Katsiyannis</p> <p>Luis Eduardo Vieira</p> <p>Balveer S Rathore</p> <p>Open Discussion</p>
11:30 - 11:40	Break
11:40 - 12:30	<p>Session (continued): Heliospheric Boundaries and CIRs</p> <p>Informal presentation/discussions (1-3 slides)</p> <p>Dusan Odstrcil</p> <p>Craig DeForest</p> <p>Open Discussion</p>

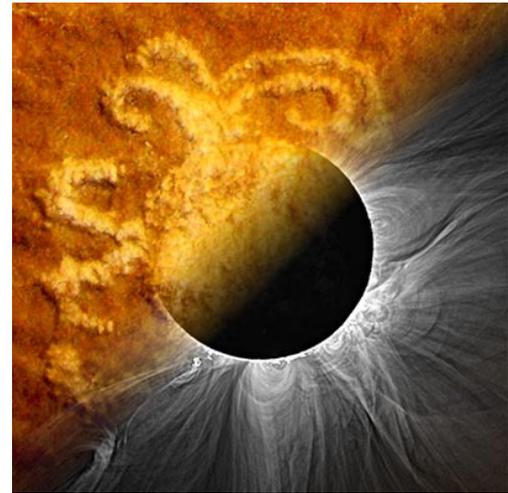
WEDNESDAY

9:55 - 11:40	Session 8 Chairs: Mihir Desai, Anna Malanushenko
9:55 - 10:40	Plenary free discussion
10:40 - 11:30	<p>Session: CMEs and Shocks</p> <p>Informal presentation/discussions (1-3 slides)</p> <p>Huw Morgan</p> <p>Satabdwa Majumdar</p> <p>Ritesh Patel</p> <p>Bin Zhuang</p> <p>Open Discussion</p>
11:30 - 11:40	Break
11:40 - 1:00	Session 9 Chairs: Mihir Desai, Anna Malanushenko
11:40 - 12:30	<p>Session (continued): CMEs and Shocks</p> <p>Informal presentation/discussions (1-3 slides)</p> <p>Sarah Gibson</p> <p>Bernard Jackson</p> <p>Phillip Hess</p> <p>Open Discussion</p>



How to Build a Community

Remember, all times PDT!!!!

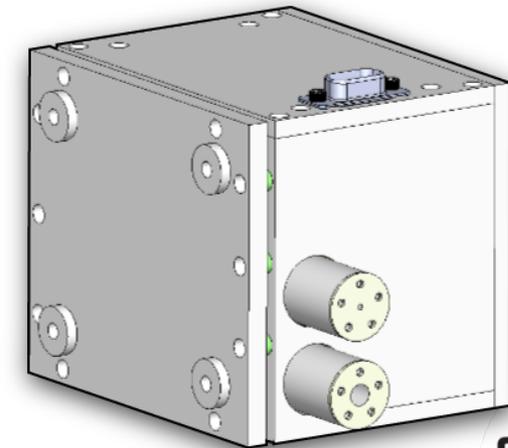


MONDAY

12:30 - 12:50	Update on the PUNCH Outreach Program	Cherilynn Morrow
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TUESDAY

12:30 - 12:50	Student Thermal Energetic Activity Module (STEAM): X-Ray Spectrometer for Solar Flares and Active Regions	Gabriela Galarraga, Samanatha Honan and Sarah Bordiuk
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TUESDAY

8:00 -

8:40

8:00 -

8:20

8:20 -

8:40



RAPHAEL ATTIÉ

George Mason University
PUNCH Associate Investigator

[more](#)



BEA GALLARDO-LACOURT

USRA & NASA/GSFC
PUNCH Associate Investigator

[more](#)



CHRIS GILLY

Laboratory for Atmospheric and Space Physics
PUNCH Associate Investigator

[more](#)



ELENA PROVORNIKOVA

Johns Hopkins University Applied Physics Laboratory
PUNCH Associate Investigator

[more](#)

WEDNES

8:00 -

8:40

8:00 -

8:20

8:20 -

8:40

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How to Train a Community

Remember, all times PDT!!!!





Ice Breaker!

Remember, all times PDT!!!!

MONDAY

1:30 - 3:30	Ice breaker activity
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