

ION COMPOSITION IN THE SUN EARTH SYSTEM

# ICSES



DURANGO, COLORADO 2019

Sunday 28th July to Saturday 3rd August, 2019

FORT LEWIS COLLEGE  
DURANGO, COLORADO  
USA.

# OVERVIEW

## Sunday 28th July

- 16:00-18:00: ARRIVAL AND REGISTRATION : STUDENT UNION BUILDING FOYER
- 18:00-SUNSET ICEBREAKER BBQ: Student Union Terrace (weather permitting!!)

## Monday 29th July (Vallecito Room)

- 08:20-08:25: WELCOME AND MEETING LOGISTICS
- 08:25-11:15: SESSION 1
- 15:00-17:50: SESSION 2
- 17:50-18:50: DISCUSSION SESSION 1

## Tuesday 30th July (Vallecito Room)

- 08:25-12:15: SESSION 3
- 15:00-17:50: SESSION 4
- 17:50-18:50: DISCUSSION SESSION 2

## Wednesday 31st July

- TBD RETURN TRAIN DURANGO TO SILVERTON!!!
- COLLABORATION DISCUSSIONS ON THE TRAIN!!

## Thursday 1st August (Vallecito Room)

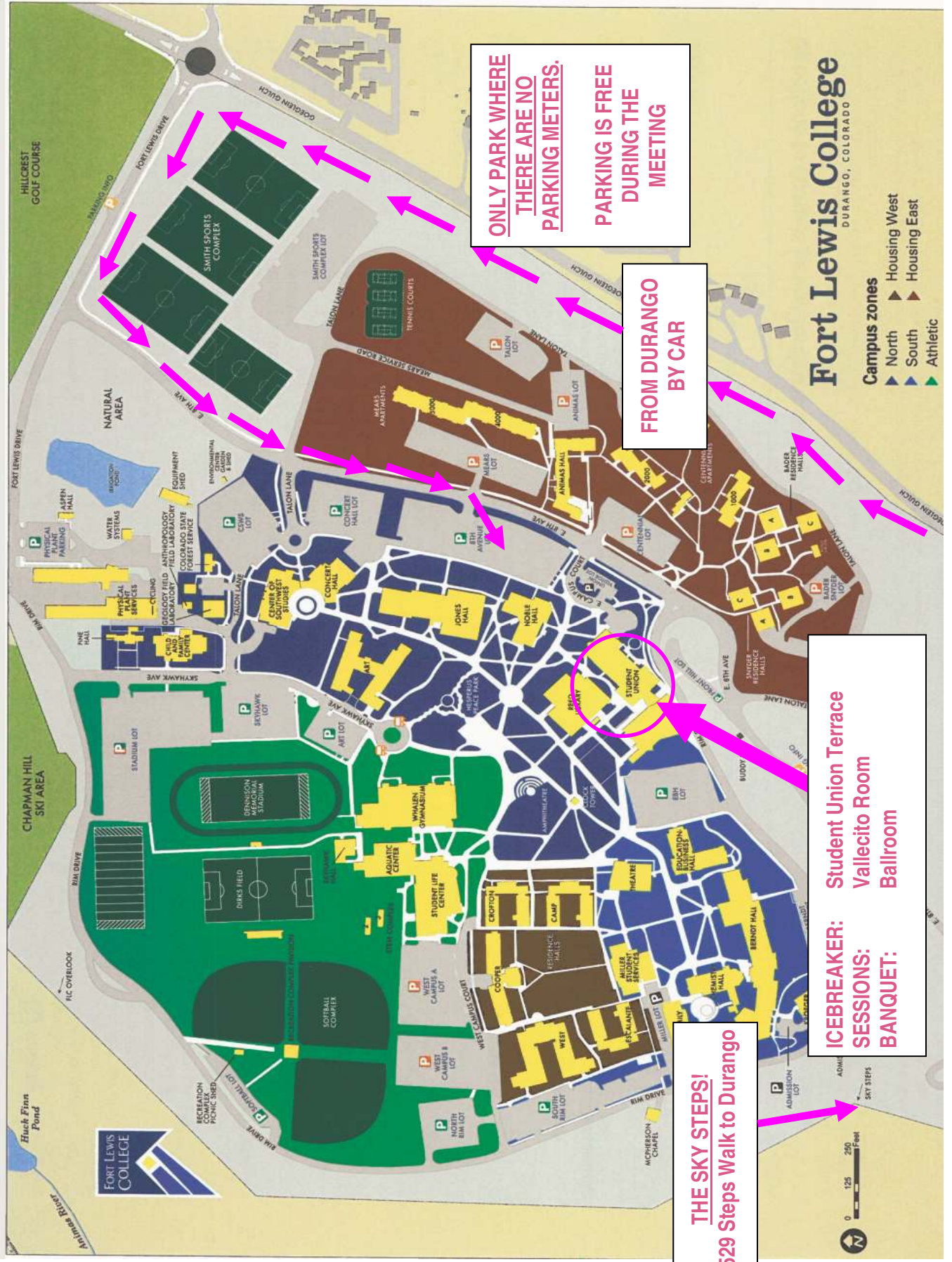
- 08:25-11:45: SESSION 5
- 13:45-16:05: SESSION 6
- 16:05-17:00: DISCUSSION SESSION 3
- 19:00-LATE: CONFERENCE BANQUET IN THE BALLROOM

## Friday 2nd August (Vallecito Room)

- 08:55-12:15: SESSION 7
- 15:00-17:50: SESSION 8
- 17:50-18:50: DISCUSSION SESSION 4

## Saturday 3rd August (Vallecito Room)

- 08:25-11:45: SESSION 9
- 11:45 FUTURE PLANS AND MEETING CLOSE



# Fort Lewis College

DURANGO, COLORADO

- Campus zones**
- ▶ North
  - ▶ South
  - ▶ Housing West
  - ▶ Housing East
  - ▶ Athletic

**ONLY PARK WHERE THERE ARE NO PARKING METERS. PARKING IS FREE DURING THE MEETING**

**FROM DURANGO BY CAR**

**ICEBREAKER:** Student Union Terrace  
**SESSIONS:** Vallecito Room  
**BANQUET:** Ballroom

**THE SKY STEPS!**  
 529 Steps Walk to Durango





- Fire Department
- Post Office
- Cash Machine
- Public Restroom
- Skate Park
- Grocery/Pharmacy
- Parking
- ATM
- Bus Stop
- Bicycle
- ?
- Space

**TRAIN LEAVE FROM HERE!!**

**Take "College Drive" to FORT LEWIS COLLEGE**

Tourism Office - 1 Mile  
Airport - 15 Miles  
Hospital - 7 Miles

Mesa Verde - 36 Miles  
Cortez - 43 Miles

Farming  
Saults  
Denise  
Dalla  
Pagosa Sp  
Albuquerque

SW Colorado Community College

KING CENTER

TOWN PLAZA

550

Animas River

Bones Ave

Library

High School

Ball Fields Fairgrounds

Community Recreation Center

Travel Lodge  
Confort Inn

Animas Country Inn

Spa Motel  
Avenue Inn

Florida Road  
Chapman Hill  
Ice Blak  
Vallecito Reservoir  
Lemon Reservoir

Library  
Fairgrounds  
Ball Fields  
Recreation Center  
D.O.W.

Durango Mountain Resort - 30 Miles  
Sheraton - 43 Miles  
Omni - 73 Miles

Berkley Park

County Courthouse

Durango Arts Center  
Young Children's  
KIDS

To Fort Lewis College

Island House

Bocheter HOBI

Durango Lodge

Fairfield Resort

General Palmer Hotel

Stater Hotel

Durango Center

Holiday Inn

Narrow Gauge Ave

Main Ave

Highway 550 Camino del Rio

Highway 160

Highway 150

Highway 140

Highway 130

Highway 120

Highway 110

Highway 100

Highway 90

Highway 80

Highway 70

Highway 60

Highway 50

Highway 40

Highway 30

Highway 20

Highway 10

Highway 0

# Monday 29th July

08:20: Welcome and Meeting Logistics

Mick Denton

▪ **SESSION 1 (Chair: Joe Borovsky) All Talks 20 Minutes + 10 Mins Questions**

08:25: Detailed Ion Composition Measurements at the Edge of the Dusk Plasmapause  
**John Foster**

08:55: Spatial / Temporal variations in the ion source populations inferred from ePOP and DMSP magnetic conjunctions **Bill Peterson**

09:25-09:45 ---BREAK---

09:45: Where do oxygen ions from the plasma mantle end up?  
**Audrey Schillings**

10:15: Storm-time proton energy spectra measured by the Van Allen Probes  
**Danny Summers**

10:45: On the role of heavy energetic ions for the dynamics of the magnetosphere: Cluster observations **Elena Kronberg**

11:15 END

▪ **SESSION 2 (Chair: Naomi Maruyama) All Talks 20 Minutes + 10 Mins Questions**

15:00: The influence of ion dynamics and composition on EMIC wave growth and structure in the inner magnetosphere **Lauren Blum**

15:30: On the cold plasma in magnetospheric physics  
**Gian Luca Delzanno**

16:00-16:20 ---BREAK---

16:20: Solar Wind Source of Plasma within a Magnetosphere: Lessons from Earth and Saturn **Robert Allen**

16:50: High-Density O<sup>+</sup> in the Outer Magnetosphere  
**Stephen Fuselier**

17:20: Multiple Satellite Observations of Oxygen Torus in the Inner Magnetosphere  
**Masahito Nosé**

17:50 END

▪ **17:50:18:50 Discussion 1 (Chairs: [Vania Jordanoval](#) and [Mike Henderson](#))**

**"SOLAR WIND OR IONOSPHERE? WHICH IS THE DOMINANT SOURCE OF IONS IN THE MAGNETOSPHERE?"**

## Tuesday 30th July

### ▪ SESSION 3 (Chair: Stephen Fuselier) All Talks 20 Minutes + 10 Mins Questions

**08:25:** Dispersive Alfvén wave control of O<sup>+</sup> ion outflow energy and energy density in the magnetosphere. **Art Hull**

**08:55:** Local changes of relative helium abundance within the solar wind  
**Tereza Ďurovcová**

**09:25:** Outflow of heavy ions from the terrestrial ionosphere: Cluster RAPID observations  
**Stein Haaland**

**09:55-10:15 ---BREAK---**

**10:15:** Insights from heavy ion composition in the solar wind  
**Sue Lepri**

**10:45:** Sources of O<sup>+</sup> in the plasma sheet  
**Lynn Kistler**

**11:15:** Generating Right-hand and Linearly Polarized Parallel EMIC Waves in the Inner Magnetosphere **Sean Fu**

**11:45:** Stochastic Alfvénic O<sup>+</sup> energization and ionospheric outflow in a global simulation  
**Bill Lotko**

**12:15 END**

### ▪ SESSION 4 (Chair: Raluca Ilie) All Talks 20 Minutes + 10 Mins Questions

**15:00:** Heavy and Molecular Ions in Ionospheric Ion Up-flows and Outflows  
**Andrew Yau**

**15:30:** HOPE and RAM-SCB Comparisons of O<sup>+</sup> Enhancements in the Inner Magnetosphere **Phil Fernandes**

**16:00-16:20 ---BREAK---**

**16:20:** Ionosphere-Thermosphere: The Main Ion Source to the Magnetosphere  
**Laila Andersson**

**16:50:** Observations of Oxygen Abundance Enhancements in the Inner Magnetosphere using Van Allen Probes **Alisha Vira**

**17:20:** Suprathermal heavy ion plasma composition from Wind: First exploration of a new dataset from STICS **Jim Raines**

**17:50 END**

### ▪ 17:50:18:50 Discussion 2 (Chairs: Sue Lepri and Jim Raines)

**"HEAVY IONS : IS THERE A HIDDEN POPULATION OF HEAVY IONS IN THE MAGNETOSPHERE?"**

**Wednesday 31st July**

**TRAIN JOURNEY : DURANGO TO SILVERTON (RETURN)**

**DETAILS AND TIMES TO FOLLOW**

**COLLABORATION DISCUSSIONS ON THE TRAIN!!!**

# Thursday 1st August

## ▪ SESSION 5 (Chair: Katherine Garcia-Sage) All Talks 20 Minutes + 10 Mins Questions

08:25: On the accumulation of O<sup>+</sup> in the plasma sheet and inner magnetosphere: when, where, how? **Matina Gkioulidou**

08:55: Solar wind temperature parameters near 1 AU: Statistical properties  
**Lynn Wilson III**

09:25: The Alpha-to-Proton Number Density and the Mesoscale Structure of the Solar Wind  
**Joe Borovsky**

09:55-10:15 ---BREAK---

10:15: Nitrogen Band for Electromagnetic Ion Cyclotron Waves: A New Perspective  
**Muhammad Bashir**

10:45: On the Unexpected Consequences of Outflow on the Magnetosphere  
**Dan Welling**

11:15: Multi-Species Dispersion Patterns in the Van Allen Probes HOPE Data: Observations and Modeling **Mike Henderson**

11:45 END

## ▪ SESSION 6 (Chair: Bill Peterson) All Talks 20 Minutes + 10 Mins Questions

13:45: On the role of Ion Composition in verifying the physical links between solar and heliospheric plasmas observed by the remote sensing and in situ payload components on Solar Orbiter.  
**Chris Owen**

14:15: Imaging the Magnetosphere in Soft X-rays  
**David Sibeck**

14:45-15:05 ---BREAK---

15:05: The effect of self-consistent ionospheric outflow on magnetotail stability and flows  
**Katherine Garcia-Sage**

15:35: Modeling the causes and consequences of ionospheric outflow  
**Alex Glocer**

## ▪ 16:05:17:00 Discussion 3 (Chairs: Roger Varney and Lynn Kistler)

# "ORIGIN AND EVOLUTION OF SOLAR WIND: WHAT DOES THE COMPOSITION TELL US?"

▪ 19:00 to LATE

*Banquet in the Ballroom*



## Friday 2nd August

### ▪ SESSION 7 (Chair: [Laila Andersson](#)) All Talks 20 Minutes + 10 Mins Questions

08:55: On the factors that control plasmaspheric ion composition

**Naomi Maruyama**

09:25: Modeling Ion Composition Effects in the Inner Magnetosphere

**Vania Jordanova**

09:55-10:15 ---BREAK---

10:15: On the role of ionospheric heavy ions in the dynamics of the near-Earth environment

**Raluca Ilie**

10:45: Oxygen ion dynamics in the Earth's ring current: Van Allen Probes observations

**Chao Yue**

11:15: Warm proton populations in the magnetotail under quiet conditions: Statistical analysis based on two-component fits of distribution functions **Kunihiro Keika**

11:45: Ambipolar Electric Fields in the Polar Cap Topside Ionosphere

**Roger Varney**

12:15 END

### ▪ SESSION 8 (Chair: [Masahito Nosé](#)) All Talks 20 Minutes + 10 Mins Questions

15:00: The role of O<sup>+</sup> on Local and Global Changes During Reconnection in the Magnetotail

**Chris Mouikis**

15:30: GAMERA-CHIMP simulations of ionospheric outflow and evolution

**John Lyon**

16:00-16:20 ---BREAK---

16:20: Heavy Ion Composition In The Notch: Multi-point Views of Dynamics in the Inner Magnetospheric Dayside Plume - Plasmapause Region **Philip Erickson**

16:50: Biased HOPE: A concept for low energy composition measurements and what we can learn **Brian Larsen**

17:20: Formation of ion multiple nose structures associated with enhanced convection

**Cristian Ferradas**

17:50 END

### ▪ 17:50:18:50 Discussion 4 (Chairs: [Elena Kronberg](#) and [Audrey Schillings](#))

**"COMPOSITION AND RECONNECTION:  
WHAT ROLE DOES THE COMPOSITION PLAY?"**

# Saturday 3rd August

▪ **SESSION 9 (Chair: Gian Luca Delzanno) All Talks 20 Minutes + 10 Mins Questions**

**08:25:** Solar wind in the de Hoffmann-Teller frame  
**Zdeněk Němeček**

**08:55:** Plasmasphere, Torus, and Cloak: A Comprehensive View of the Typical Distribution of Cold-to-Warm Ions in the Inner Magnetosphere **Jörg-Micha Jahn**

**09:25-09:45 ---BREAK---**

**09:45:** Temperature Dependence of Plasmaspheric Ion Composition  
**Jerry Goldstein**

**10:15:** Reprocessing of GOES Magnetospheric Proton Observations for Use in an Empirical Flux Model **Juan Rodriguez**

**10:45:** Characteristics of Ion Kinetic Energies Dominating Plasma pressure: Spatial Distributions and Mass Dependence **Kunihiro Keika**

**11:15:** Plasma Transport from Inner Magnetosphere to Dayside Magnetopause  
**Mick Denton**

## MEETING ENDS

