

# Mass-Independent Fractionation of Sulfur Isotopes: Possible Molecular Origins—Workshop Schedule

## Sunday, June 5

6:00-8:00 PM Reception and registration at Arroyo Wine Bar (220 E. Colorado)

## Monday, June 6

8:00-8:30 AM Breakfast, registration for late-comers at Telluride Firehouse Community Room (131 W. Columbia, 2<sup>nd</sup> Floor; use external stairway on east side of bldg; look for TSRC signs)

8:30-9:00 AM Opening remarks and presentation: **Bill Poirier and Mark Kozak**

9:00-9:45 AM Overview talk: "Sulfur Isotopes in the Rock Record: Tools and terminology"  
**James Farquhar**

9:45-10:05 AM Discussion and Coffee Break

10:05-10:35 AM "Measurement of All Sulfur Isotopes (5): From Mt Everest to photochemistry experiments" **Mark Thiemens**

10:45-11:15 AM "S-MIF Signatures Identified in Fracture Waters in the Canadian Shield"  
**Jill McDermott**

11:25-4:00 PM Free Time

4:00-4:30 PM "Geochemical records of S-MIF in the Archean: Moving beyond O<sub>2</sub>" **Aubrey Zerkle**

4:40-5:10 PM "Photochemical Modeling of Sulfur MIF in the Archean Atmosphere:  
What does it tell us?" **James Kasting**

5:20-6:00 PM "Minor Sulfur Isotope Constraints on the Composition of Earth's Archean  
Atmosphere" **Mark Claire**

7:00-9:00 PM Group Dinner at Floradora (TSRC will cover \$20/person)

## Tuesday, June 7

8:00-8:30 AM Breakfast

8:30-9:15 AM Overview talk: "Chemical Quantum Dynamics: Tools and terminology"  
**Millard Alexander**

9:25-9:45 AM "Can Paleoenvironmental Information Constrain S-MIF Generation?" **Itay Halevy**

9:45-10:15 AM Discussion and coffee break

10:15-11:45 AM "Sulfur MIF Applied to the Archean Atmosphere, SO<sub>2</sub> Isotopologues Spectra from  
Experiments, the Role of SO and Photochemical Models" **Sebastian Danielache**

10:55-11:25 AM "Transient IR Probing of SO from SO<sub>2</sub> Photodissociation" **Amy Mullin**

11:35-6:00 PM Free time (Hike: Bear Creek Falls with Bill Poirier)

6:00-7:00 PM TSRC Town Talk, Sheridan Opera House  
**Michael New**, NASA Astrobiology Program Officer,  
"Searching for Life in All the Right Places"

### Wednesday, June 8

- 7:30-8:30 AM Breakfast
- 8:00-4:00 PM Free time (Hike: Jud Wiebe and Sneffels Highline with Poirier and Kozak)
- 4:00-4:45 PM Overview Talk: "Quantum Reaction Dynamics and Mass-Independent Fractionation in Ozone and Sulfur" **Dmitri Babikov**
- 4:45-5:05 PM Discussions and coffee break
- 5:05-5:35 PM "Theoretical Studies on the Mechanisms of Photochemical Reactions of Sulfur-containing Compounds" **Shinkoh Nanbu**
- 5:35-8:10 PM Free time
- 8:10-8:40 PM "New *ab initio* Potentials for the Ground and Excited Electronic States of SO<sub>2</sub> and SO" **Jacek Klos**
- 8:50-9:20 PM "Photochemistry of SO<sub>2</sub> and Implications in Mass-independent Fractionation of Sulfur" **Hua Guo**

### Thursday, June 9

- 8:00-8:30 AM Breakfast
- 8:30-9:00 AM "The Quantum States of SO<sub>2</sub>: State labeling,  $C \leftarrow X$  vibronic transitions, and ramifications for self-shielding" **Bill Poirier**
- 9:10-9:40 AM "Rovibrational Bound States of SO<sub>2</sub> Isotopologues" **Praveen Kumar**
- 9:50-10:10 AM Discussion and coffee break
- 10:10-10:40 AM "Accurate IR Line Lists for SO<sub>2</sub> Isotopologues" **Xinchuan Huang**
- 10:50-3:00 PM Free Time
- 3:00-3:30 PM Funding Opportunities: **Michael New**
- 3:30-3:50 PM Discussion and coffee break
- 3:50-4:20 PM Group Discussion: Current and future progress led by **Hua Guo and Boswell Wing**
- 4:20-4:30 PM Closing Remarks: **Bill Poirier and Hua Guo**
- 5:30-8:00 PM Conference Dinner at New Sheridan Chop House (TSRC will cover all but alcohol)

### Friday, June 10

- 7:30-9:30 AM Breakfast at Baked in Telluride (informal)