

# Christopher T. Seagle

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## CONTACT INFORMATION

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## POSITIONS HELD

**2009-current:** Smithsonian/Carnegie Institution  
Postdoctoral Fellow (Joint Appointment)

**2004-2009:** Graduate Student, University of Chicago

## RESEARCH INTERESTS

High pressure phase diagrams, melting curves, sub-solidus phase transitions, elasticity, and optical properties of metals and semi-conductors at high pressure.

## EDUCATION

**2004** B.S. Physics, Iowa State University, Ames, IA  
**2009** Ph.D. Geophysical Sciences, The University of Chicago, Chicago, IL (Advisor: Dion L. Heinz)

## TEACHING EXPERIENCE

I have been a teaching assistant for the following courses: Mineralogy (L. Grossman), Physics of the Earth (D. Heinz, B. Buffett), Origin and Evolution of the Solar System (L. Grossman).

## PUBLICATIONS

1. Buffett, B., and C.T. Seagle (2009), Stratification of the top of the core due to chemical interactions with the mantle, *J. Geophys. Res.*, submitted.
2. Campbell, A.J., L. Danielson, K. Righter, C.T. Seagle, Y. Wang, and V.B. Prakapenka (2009), High pressure effects on the Iron-Iron Oxide and

- Nickel-Nickel Oxide oxygen fugacity buffers, *Earth Planet. Sci. Lett.*, in press.
3. Seagle, C.T., D.L. Heinz, Z. Liu, and R.J. Hemley (2009), Synchrotron infrared reflectivity measurements of iron at high pressures, *Applied Optics*, 48(3), 545-552.
  4. Seagle, C.T., W. Zhang, D.L. Heinz, and Z. Liu (2009), Far infrared dielectric and vibrational properties of non-stoichiometric wüstite at high pressure, *Physical Review B*, 79, 014104, doi:10.1103/PhysRevB.79.014104.
  5. Seagle, C.T., D.L. Heinz, A.J. Campbell, V.B. Prakapenka, S.T. Wanless (2008), Melting and thermal expansion in the Fe-FeO system at high pressure, *Earth Planet. Sci. Lett.*, 265, 655-665, doi:10.1016/j.epsl.2007.11.004.
  6. Campbell, A.J., C.T. Seagle, D.L. Heinz, G. Shen, and V.B. Prakapenka (2007), Partial melting in the Iron-Sulfur system at high pressure: a synchrotron x-ray diffraction study, *Phys. Earth Planet. In.*, 162, 119-128, doi:10.1016/j.pepi.2007.04.001.
  7. Seagle, C.T., A.J. Campbell, D.L. Heinz, G. Shen, and V.B. Prakapenka (2006), Thermal equation of state of Fe<sub>3</sub>S and implications for sulfur in Earth's core, *J. Geophys. Res.*, 111, B06209, doi:10.1029/2005JB004091.

#### PROFESSIONAL PRESENTATIONS

1. Seagle, C.T., D.L. Heinz, A.J. Campbell, and V.B. Prakapenka (2006), Melting in the Fe-FeO system at high pressure, *Eos Trans. AGU*, 87(52), Fall Meet. Suppl., Abstract U43C-08.
2. Seagle, C.T., "Melting in the Fe-FeO and Fe-Fe<sub>3</sub>S systems at high pressure" High Pressure Group Meeting at the Advanced Photon Source, April 26, 2007.
3. Seagle, C.T., D.L. Heinz, A.J. Campbell, N. Miller, V.B. Prakapenka (2007), Liquidus temperatures in the iron-sulfur system and melting of Fe<sub>3</sub>S at high pressure, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract MR31D-06 Invited.

4. Seagle, C.T., D.L. Heinz, Z. Liu, R.J. Hemley (2007), Synchrotron infrared reflectivity of iron at high pressure, Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract MR53A-04.

#### COLLABORATORS

Andrew Campbell (University of Maryland); Elizabeth Cottrell (Smithsonian Institution); Lisa Danielson (NASA); Yingwei Fei (Carnegie Institution); Yejun Feng (Argonne National Laboratory); Dion Heinz (University of Chicago); Russell Hemley (Geophysical Lab, Carnegie Institution); Raphael Jaramillo (University of Chicago); Noah Miller (University of Maryland); Vitali Prakapenka (University of Chicago/CARS); Kevin Righter (NASA); Thomas Rosenbaum (University of Chicago); Guoyin Shen (Carnegie Institution/HPCAT); Daniel Silevitch (University of Chicago); Yanbin Wang (University of Chicago/CARS); Simone Wanless (University of Chicago), Wenxuan Zhang (University of Chicago); Zhenxian Liu (Carnegie Institution/NSLS)