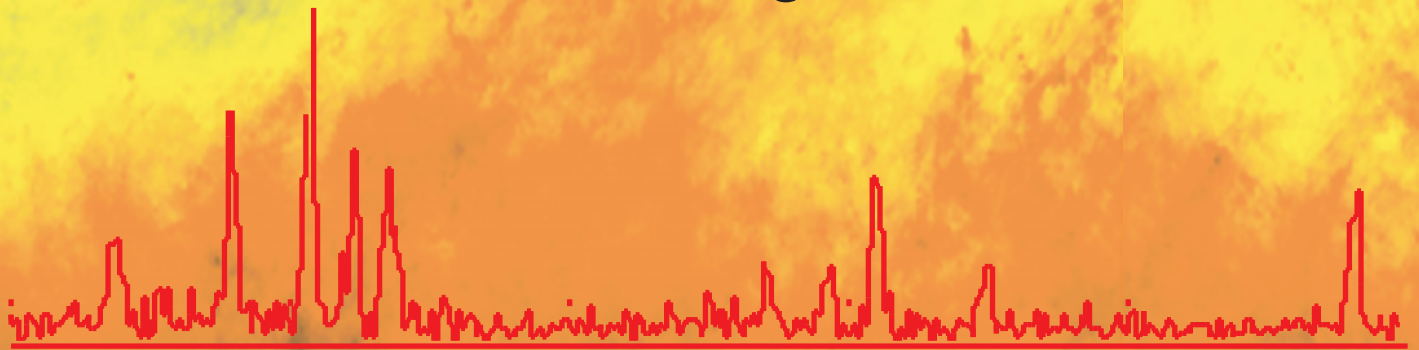


ASOS 10

Berkeley 20

Program and Abstracts



Tenth International Colloquium on Atomic Spectra and Oscillator Strengths
for Astrophysical and Laboratory Plasmas, August 3 - 7, 2010, Berkeley, CA, USA

<http://sprg.ssl.berkeley.edu/labastro/ASOS10>

General Information

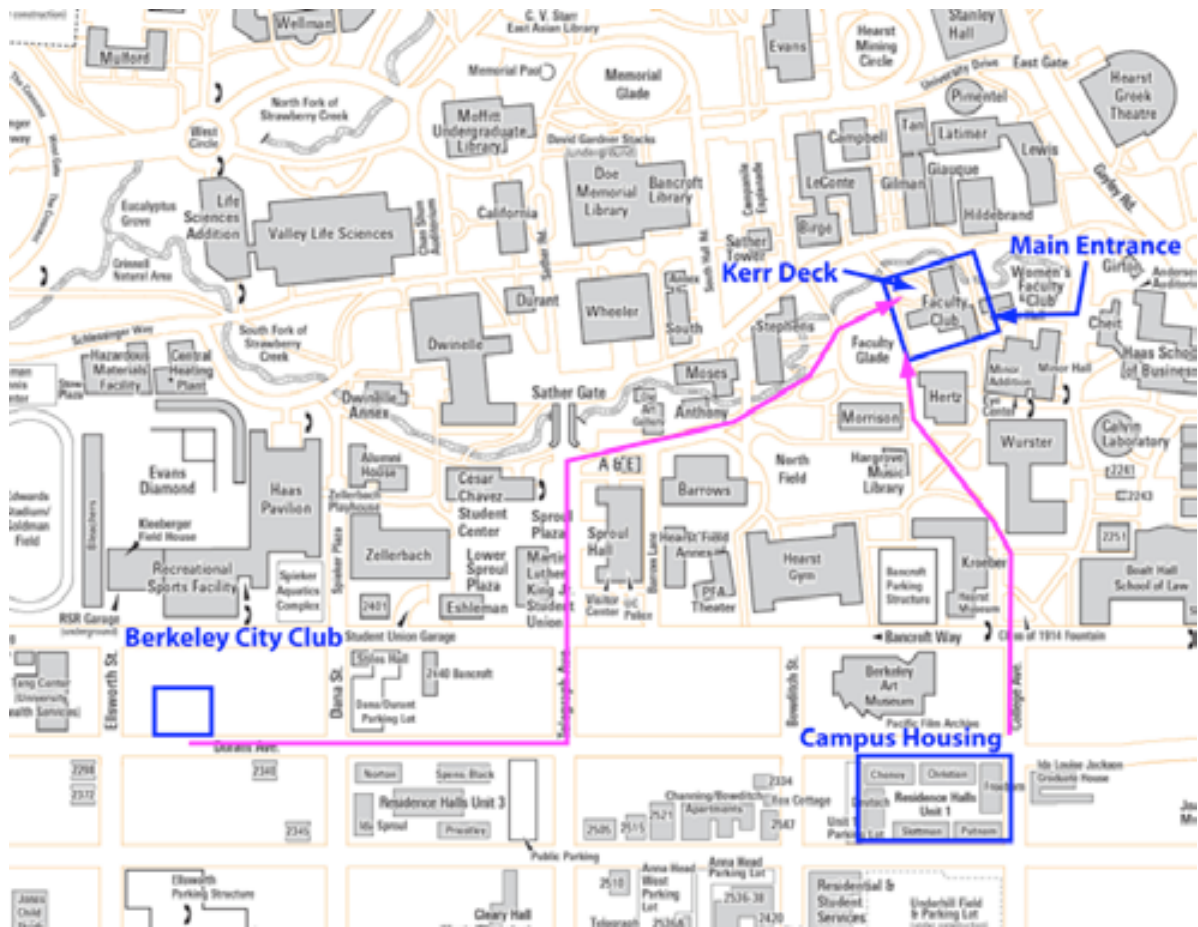
The conference is being held at Berkeley (CA, USA), from August 3 to 7, 2010.

The Welcome Reception and Registration will take place in the Drawing Room at the Berkeley City Club at 2315 Durant Avenue on Tuesday evening. All oral presentations are given in the Ballroom of the Berkeley City Club.

The poster session and the subsequent oenological training session are held at Putnam Hall at 2650 Durant Avenue, a few blocks up hill on the same street (other side), across from the Berkeley Art Museum and Pacific Film Archive.

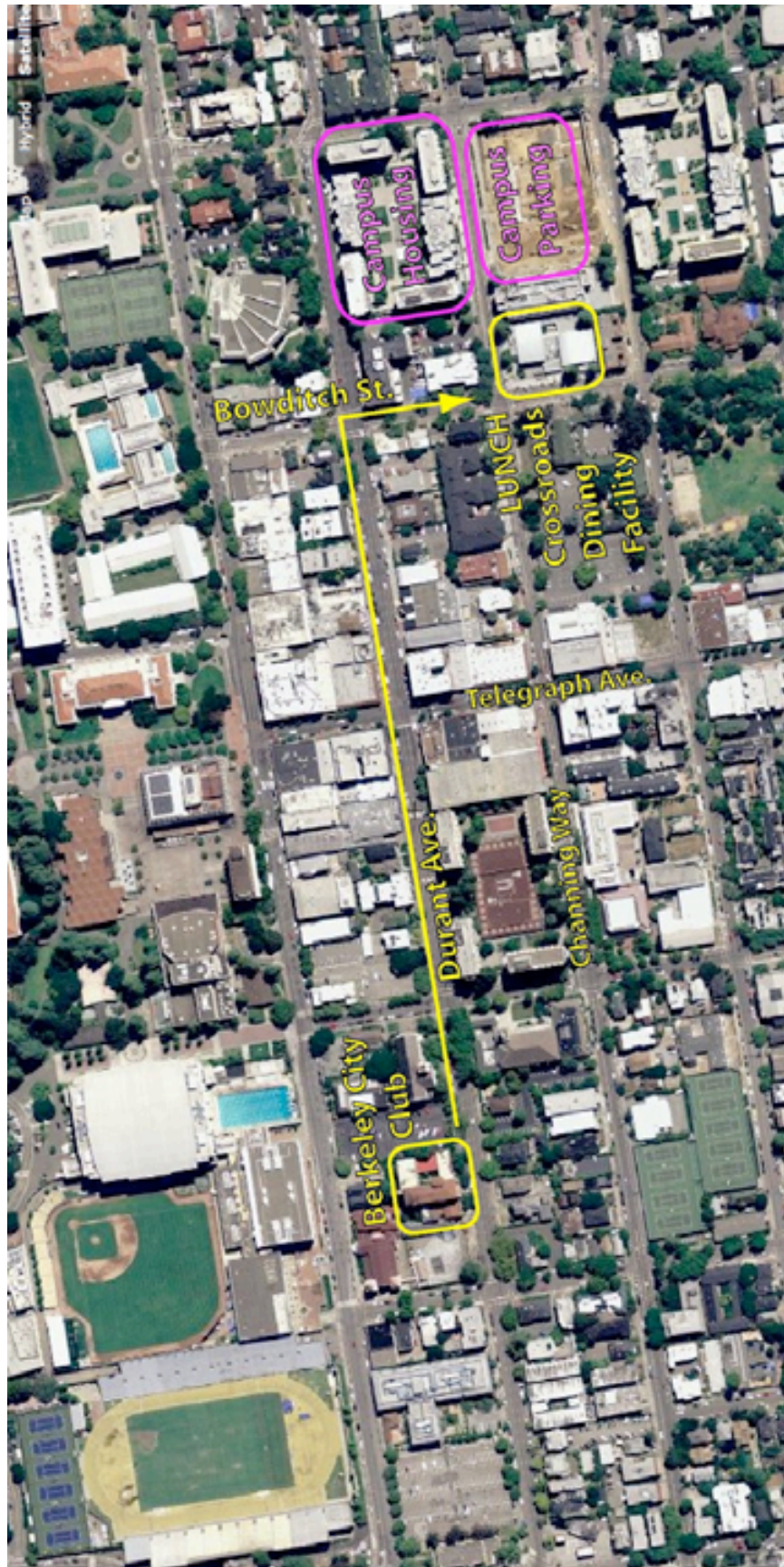


The Conference Dinner will take place at the UCB Faculty Club inside the UCB campus. For directions see the map below.



Lunch for registered guests at the Unit1 facility of the University of California is available at *Crossroads* at 2415 Bowditch Street across the street from the Unit1 complex (see map below). *Crossroads* serves a large variety of all-organic meal items. All ASOS10 participants are welcome to eat there. The cost of an all-you-can-eat lunch is \$ 11 (including desserts, drinks, tax, etc.). This is one of the quickest ways to get an excellent meal during the lunch break. We will have discounted meal tickets available at the ASOS registration desk for those who would like to eat at this facility.

A large number of restaurants and eateries can be found along Telegraph Avenue and Durant Avenue two blocks up hill from the Berkeley City Club. The Berkeley City Club also has a dining facility, which open for lunch and dinner.



Central Berkeley is best explored by foot, although buses also run through. Legal car parking in Berkeley (and San Francisco) is scarce, highly regulated, and intensely controlled. The public transportation system is extensive. BART trains (mostly under ground) from Downtown Berkeley (see map below for the location of the nearest station) reach the SFO and OAK airports with no more than a single change of trains; downtown San Francisco is a train ride of less than 30 min away. Just outside the SF Powell Street BART station, a visitor bureau provides ample free information (maps and booklets) on the sights and experiences of the Bay Area, and on the means to get there, such as MUNI trams and buses (and the various counties' separate bus systems). Look / ask for “transfer tickets” to reduce cost when switching between traffic systems.



The ASOS10 website gives links to parking information and to sites that help you to explore the area.

Program

Tuesday, August 3, 2010

17 -- 20h Registration at the Berkeley City Club

18 – 20:30h Reception

Wednesday, August 4, 2010

8:30h Conference opening

Astrophysics

Chair: Beatriz Barbuy (U São Paulo, Brasil)

8:45h G. Wahlgren (CUA Washington, DC, and NASA Goddard SFC,
Greenbelt, MD, USA)

“Atomic data for stellar astrophysics from the UV to the IR”

9:15h U. Sofia (AU, Washington, DC, USA)

“Mining for rare elements in interstellar spectra”

9:45h E. Quataert: (UCB, SSL, Berkeley, CA, USA)

“Astrophysical transients powered by the decay of r-process nuclei”

10:15h Morning break

Atomic Data & Measurement

Chair: Jim Lawler (UW, Madison, WI, USA)

- 10:45h J. Pickering (Imperial College, London, UK)
“Laboratory measurements of oscillator strengths and their astrophysical applications”
- 11:15h R. Blackwell-Whitehead (Lund Observatory, Lund, Sweden)
“Infrared atomic oscillator strengths for the study of ultracool dwarf stars, brown dwarfs and exoplanets”
- 11:30h M. Simon (MPI-K, Heidelberg, Germany, and TRIUMF, Vancouver, Canada)
“Photoionization of Fe ¹⁴⁺: An EBIT measurement at a synchrotron radiation source”
- 12:00h Lunch break

Theory

Chair: Tomas Brage (U Lund, Sweden)

- 13:30h S. Nahar (OSU, Columbus, OH, USA)
“High accuracy radiative data for plasma opacities”
- 14:00h M. Bautista (WMU, Kalamazoo, MI, USA)
“Atomic data for singly and doubly ionized Fe-peak species”
- 14:15h F. Wyart (Lab. Aime Cotton, Orsay, France)
“Interpretation of complex atomic spectra with the parametric method and Cowan codes”
- 14:45h R. Kurucz (CfA, Cambridge, MA, USA)
“Including all the lines”
- 15:30h Afternoon break

Polarization

Chair: Verne Jacobs (NRL, Washington, USA)

- 16:00h T. Shikama (Kyoto U, Kyoto, Japan)
"Plasma polarization spectroscopy of atomic and molecular emission from magnetically confined plasmas"
- 16:30h D. Den Hartog (UW, Madison, WI, USA)
"Spectral analysis of polarized light from the motional Stark effect in a high-temperature plasma"
- 16:45h V. Kantsyrev (UNR, Reno, NV, USA)
"X-ray polarimetry at the Z-pinch generator at UNR: past and future"
- 17:15h A. Urnov (Lebedev Physical Institute, Moscow, Russia)
"Verification and application of atomic polarization and spectral data for diagnostics of coronal plasma by their XUV spectra and spectral images"
- 17:45h G. Csanak (LANL, Los Alamos, NM, USA)
"The derivation of kinetic equations for anisotropic plasmas from the impact approximation"
- 18:00h End of session

Thursday, August 5, 2010

Theory

Chair: Alan Hibbert (Belfast, NI, UK)

- 8:30h W. R. Johnson (UND, Notre Dame, IN, USA)
"Hyperfine quenching: Review of experiment and theory"
- 9:15h Y. Ishikawa (UPR, San Juan, PR, USA)
"Relativistic multi-reference many-body perturbation theory for open-shell ions with multiple valence shell electrons"
- 9:45h Morning break

Fundamental Tests

Chair: Steve Federman (U Toledo, OH, USA)

- 10:15h K. Olive (UMN, Minneapolis, MN, USA)
“Testing the variation of fundamental constants with astrophysical and spectroscopic data”
- 11:00h M. Safronova (U Delaware, Newark, DE, USA)
“Atomic calculations for tests of fundamental physics”
- 11:30h V. V. Flambaum (U New South Wales, Sydney, Australia)
“Space-time variation of fundamental constants and accurate measurements of atomic spectra” (presented by D. Budker (UC Berkeley, USA))
- 12:00h Lunch break
SOC meets at the BCC restaurant

Tungsten

Chair: Wolfgang L. Wiese (NIST Gaithersburg, MD, USA)

- 13:15h A. Kramida (NIST, Gaithersburg, MD, USA)
“Recent progress in spectroscopy of tungsten”
- 13:45h J. Clementson (LLNL, Livermore, CA, USA)
“Tungsten spectroscopy at the Livermore EBIT and SSPX facilities”
- 14:15h U. I. Safronova (UNR, Reno, NV, USA)
“Dielectronic recombination and satellite line spectra of highly charged tungsten ions”
- 14:30h Afternoon break

Plasmas

Chair: Christoph Biedermann (MPI-P, Greifswald, Germany)

- 15:00h D. Benredjem (Lab. Aime Cotton, Orsay, France)
“Radiative power losses in fusion plasmas”

- 15:30h A. Graf (LLNL, Livermore, CA, USA)
“Visible magnetic dipole emission from Ar X and Ar XIV in Alcator C-Mod tokamak plasmas”
- 16:00h P. G. Cox (UNR, Reno, NV, USA)
“Analysis of nickel and low-Z impurity EUV and SXR radiation from NSTX and comparison with laser plasma spectra”
- 16:15h T. Lennartson (Lund U, Lund, Sweden)
“Time-resolved spectroscopy of the electrode region in a fluorescent lamp”
- 16:45h S. Hansen (SNL, Albuquerque, NM, USA)
“Configuration interaction in statistically complete hybrid-structure atomic models”
- 17:00h End of session
- 17:30h *Reception* begins at the UC Berkeley Faculty Club
- 19:30h *Conference Dinner*
- E. Träbert (Ruhr-Universität Bochum, Germany,
and LLNL, Livermore, CA, USA)
“Indrek Martinson – Life of a spectroscopist”

Friday, August 6, 2010

Atomic Data & Measurement

Chair: Richard Holt (UWO, London, Ontario, Canada)

- 9:00h N. Sterling (MSU, East Lansing, MI, USA)
“New atomic data for trans-iron elements and its application to abundance determinations in planetary nebulae”
- 9:30h A. Lobel (Royal Observatory, Brussels, Belgium)
“Oscillator strength measurements of atomic absorption lines from stellar spectra”

- 9:45h M. Richter (UCD, Davis, CA, USA)
“SOFIA’s spectroscopic capabilities”
- 10:15h M. Witthoeft (NASA Goddard SFC, Greenbelt, MD, USA)
“The universal atomic database”

10:30h Morning break

Polarization

Chair: David Kilcrease (LANL, Los Alamos, USA)

- 11:00h H. Yan (Kavli Inst., Peking U, Beijing, China)
“Atomic alignment – a new diagnostics of astrophysical magnetic field”
- 11:30h C. Bostock (Curtin U, Perth, Australia)
“Polarization of the Lyman- α_1 x-ray line emitted by hydrogen-like Ti^{21+} , Ar^{17+} , and Fe^{25+} ions excited by electron impact”
- 11:45h P. Hakel (UNR, Reno, NV, USA)
“Polarization properties of the Ly-alpha line from sulphur and nickel plasmas driven by high-intensity, ultrashort-duration laser pulses”
- 12:00h D. Thorn (GSI, Darmstadt, Germany)
“Polarization and anisotropic emission of K-shell radiation from heavy few-electron ions”
- 12:15h C. Fontes (LANL, Los Alamos, NM, USA)
“Relativistic distorted-wave and Dirac R-matrix calculations of the x-ray line polarization and the 3C and 3D lines in Fe XVII”
- 12:30h Lunch break

Theory & Poster Haikus

Chairs: Greg Brown (LLNL, Livermore, USA) and Maurice Leutenegger (GSFC, Greenbelt, USA)

- 13:45h Z. Harman (MPI-K, Heidelberg, Germany)
“Cross section enhancement in correlated resonant recombination processes”
- 14:15h Poster Haiku I
- 14:30h O. Yu. Andreev (St. Petersburg State U, St. Petersburg, Russia)
“Electron recombination with H-like highly charged ions”
- 14:45h A. Marchuk (FZ Jülich, Germany)
“Kinetics of parabolic states of hydrogen beam in fusion plasmas”
- 15:00h Poster Haiku II
- 15:15h End of session
- 15:30h *Poster session* (poster boards ready by noon) in Putnam Hall
- 17:30h Wine tasting starts

Saturday, August 7, 2010

Astrophysics

Chair: Donald C. Morton (NRC, Victoria, BC, Canada)

- 8:30h N. Grevesse (U Liege, Liege, Belgium)
“The new solar chemical composition”
- 9:15h C. E. Woodward (UMN, Minneapolis, MN, USA)
“Spitzer, novae, cross-sections, and reaction rates”
- 9:45h H.-G. Ludwig (Landessternwarte, Heidelberg, Germany)
“3D model atmospheres and needs for accurate atomic data”
- 10:00h Morning break

Tungsten

Chair: Lydia Tchang-Brillet (Observatoire de Paris, Meudon, France)

- 10:15h Y. Podpaly (MIT, Cambridge, USA)
“Tungsten research at Alcator C-Mod and EBIT for future fusion reactors”
- 10:45h J. Dunn (LLNL, Livermore, CA, USA)
“Determining plasma core conditions in magnetic fusion devices using X-ray emission spectroscopy of highly ionized tungsten”
- 11:15h G. S. Osborne (UNR, Reno, NV, USA)
“Spectroscopic analysis of M-shell tungsten benchmarked with LLNL EBIT data and compared with Z-pinch plasma experiments”
- 11:30h S. Loch (Auburn U, Auburn, AL, USA)
“Testing and improving the dielectronic recombination data used in fractional abundance calculations of tungsten”
- 12:00h End of session

Conference Outings

- 13:00h Bus leaves the Berkeley City Club for trip to Muir Woods, via Golden Gate Bridge to Fisherman’s Wharf, Ferry Ride to Oakland
- 20:00h Planned return to BCC
- 15:30h Bus leaves the Berkeley City Club for trip to Lick Observatory on Mt. Hamilton in the South Bay near San Jose.
- 18 – 21h Tour of the observatory
(with a historic, very large refracting telescope - second largest in the world; the grave of the sponsor, James Lick, is in the telescope base). If viewing is good, the visit may last until 23h.
- 23 – 01h Planned return to BCC

Posters

Poster Numbers and Poster Abstracts

Please mount your posters on the poster boards marked with the numbers given below.

Oscillator Strengths

- P01 Martin Andersson *Accurate Mn I line profiles in the H-band*
- P02 Erik Bäckström *The FERRUM Project: Experimentally determined lifetimes of the metastable $c^4D_{5/2}$ and $c^4D_{7/2}$ levels in Cr II*
- P03 Beatrix Barbuy *Fe II and heavy-element lines in the HST-STIS spectrum of the uranium-rich metal-poor star CS31082-001*
- P04 Émile Biémont *Transition probabilities in heavy elements and ions ($37 \leq Z \leq 86$) and the specific case of tungsten*
- P05 Tomas Brage *Hyperfine quenching in Be-, Mg- and Zn-like ions*
- P06 Narayan C. Deb *Configuration interaction calculation of allowed and forbidden transitions in Fe II*
- P07 Elisabeth Den Hartog *Transition probabilities of neutral rare earths - Er I and Gd I*
- P08 Lars Engström *Radiative parameters of Nb I excited states*
- P09 Steve Federman *Lifetimes and branching fractions for ultraviolet transitions in P II*
- P10 Vanessa Fivet *Effective collision strengths for transitions within the ground configuration of carbon-like Neon*
- P11 Jeffrey R. Fuhr *A new, greatly expanded tabulation of accurate transition probabilities for the lightest five elements*
- P12 Jonas Gurell *The FERRUM project: Laboratory-measured transition probabilities for Cr II*
- P13 Jon Grumer *F-dependent lifetimes and intensity redistribution due to off-diagonal hyperfine interaction*
- P14 Alan Hibbert *Accurate configuration-interaction calculation of transitions in Sn II*
- P15 Hugh R.A. Jones *The utility of atomic lines in cool dwarfs*
- P16 James E. Lawler *Improved $\log(gf)$ values of selected lines in Mn I and Mn II for studies of non-equilibrium effects in stellar photospheres*

- P17 Hampus Nilsson *Lifetime measurements for atomic levels with astrophysical interest*
- P18 Donald C. Morton *Relativistic corrections to He I transition rates*
- P19 Larissa Podobedova *Spectral data for nickel: Ni I through Ni VIII*
- P20 S. David Rosner *Measurements of isotope shifts and hyperfine structure in Ti II*
- P21 Matthew Ruffoni *Accurate laboratory wavelengths of the 1910 Å Ti II resonance transitions relevant to time variations of the fine structure constant*
- P22 Ulyana Safronova ... *Excitation energies, E1, M1, and E2 transition rates, lifetimes, and polarizabilities in Ca⁺, Sr⁺, Cd⁺, Ba⁺, and Hg⁺ ions*
- P23 Swaraj Tayal *Oscillator strengths for transitions in singly ionized nitrogen*

Tungsten

- P24 Colm Harte *Investigation of tungsten impurity spectra at the LHD*
- P25 Lydia Tchang-Brillet *Spectra of moderately charged tungsten ions*

Polarization

- P26 George Csanak *Creation, destruction, and transfer of atomic multipole moments by electron scattering: relativistic treatment*
- P27 Verne Jacobs *Polarized atomic radiative emission in electric and magnetic fields*
- P28 P. Kravtsov *Double polarized dd-fusion*
- P29 Alla Safronova *Theoretical predictions for plasma polarization spectroscopy experiments at the Zebra generator at UNR*

Plasma Spectra

- P30 Jonathan Kamp *Time resolved UV spectroscopy on the Alcator C-MOD tokamak*
- P31 Thomas Lennartsson *Time resolved spectroscopy in the thin non-LTE plasma of a fluorescent tube*
- P32 Nora Nassiri Mofakham *Study of a strongly dispersive solitary wave in two-component plasma*

Highly Charged Ions

- P33 Peter Beiersdorfer ... *New and revised assignments of solar Fe XI, Fe XII, and Fe XIII lines in the extreme ultraviolet wavelength range near 200 Å*
- P34 Greg Brown *A brief overview of the fusion and astrophysics data and diagnostic calibration facility*
- P35 Mau Chen *Hyperfine quenching of the metastable $4s4p\ ^3P_{0,2}$ of Zn-like ions*
- P36 Priya Desai *Using laboratory measurements of silicon along with theoretical calculations to identify features in the extreme ultraviolet spectra of the sun and other cool stars*
- P37 Alex Dixon *New identifications of Fe XIV-XVI in the solar EUV spectrum*
- P38 Sultana N. Nahar *K_{α} transition probabilities for Platinum and Uranium Ions*
- P39 Huihui Kang *Large-scale multiconfiguration Dirac-Fock calculations on E1, M1, E2, and M2 transition rates of Si-like Fe ion*
- P40 Jaan Lepson *New identifications of Fe XI-XIII in the solar EUV spectrum*
- P41 Maurice Leutenegger *Line identification in the 2006 outburst of the recurrent nova RS Oph – Cl and Ar L-shell wavelengths*
- P42 L. Natarajan *Oscillator strength of Li-like ions*
- P43 Mónica Raineri *New analysis of the spectrum of xenon eight times ionized, XeIX*
- P44 Martin Simon *The TITAN facility at TRIUMF: Investigating rare isotopes using ion traps*
- P45 Elmar Träbert *The $3s^23p3d\ ^3F^o$ term in the Si-like spectrum Fe XIII*
- P46 Elmar Träbert *Measurements and calculations of Zn-like heavy ions – an update*
- P47 Alexandre Vallette ... *Analytical study of electrostatic ion beam traps*
- P48 Calvin Zulick *K-shell spectroscopy of Au plasma generated with a short pulse laser*

ASOS10 - PROGRAM OVERVIEW

Tuesday
August 3, 2010

Wednesday
August 4, 2010

Thursday
August 5, 2010

Friday
August 6, 2010

Saturday
August 7, 2010

	8:30 Conference Opening	8:30 W. Johnson	9:00 N. Sterling	8:30 N. Grevesse
	8:45 G. Wahlgren	9:15 Y. Ishikawa	9:30 A. Lobel	9:15 C. Woodward
	9:15 U. Sofia	9:45 morning break	9:45 M. Richter	9:45 H. Ludwig
	9:45 E. Quataert	10:15 K. Olive	10:15 M. Witthoef	10:00 morning break
	10:15 morning break	11:00 M. Safronova	10:30 morning break	10:15 Y. Podpaly
	10:45 J. Pickering	11:30 V. Flambaum	11:00 H. Yan	10:45 J. Dunn
	11:15 R. Blackwell-Whitehead	12:00 lunch break	11:30 C. Bostock	11:15 G. Osborne
	11:30 M. Simon	13:15 A. Kramida	11:45 P. Hakel	11:30 S. Loch
	12:00 lunch break	13:45 J. Clementson	12:00 D. Thorn	12:00 session ends
	13:30 S. Nahar	14:15 U. Safronova	12:15 C. Fontes	
	14:00 M. Bautista	14:30 afternoon break	12:30 lunch break	13:00 Bus leaves for Muir Woods (from Berkeley City Club)
	14:15 F. Wyart	15:00 D. Benredjem	13:45 Z. Harman	
	14:45 R. Kurucz	15:30 A. Graf	14:15 Poster Haiku-I	
	15:30 afternoon break	16:00 P. Cox	14:30 O. Andreev	15:30 Bus leaves for Lick Observatory (from City Club)
	16:00 T. Shikama	16:15 T. Lennartsson	14:45 A. Marchuk	
	16:30 D. Den Hartog	16:45 S. Hansen	15:00 Poster Haiku-II	
	16:45 V. Kantsyrev	17:00 session ends	15:15 oral session ends	
17:00 Registration opens	17:15 A. Urnov			
18:00 Reception starts	17:45 G. Csanak	17:30 Reception opens	15:30 Poster Session	
20:30 Registration closes	18:00 session ends	19:30 Dinner (UC Berkeley Faculty Club)	17:30 Wine tasting starts (both at Putnam Hall) *poster boards ready by noon	

SESSION LEGEND

Fundamental tests

Astrophysics

Theory

Polarization

Tungsten

Plasmas

Atomic Data & Measurement

Posters