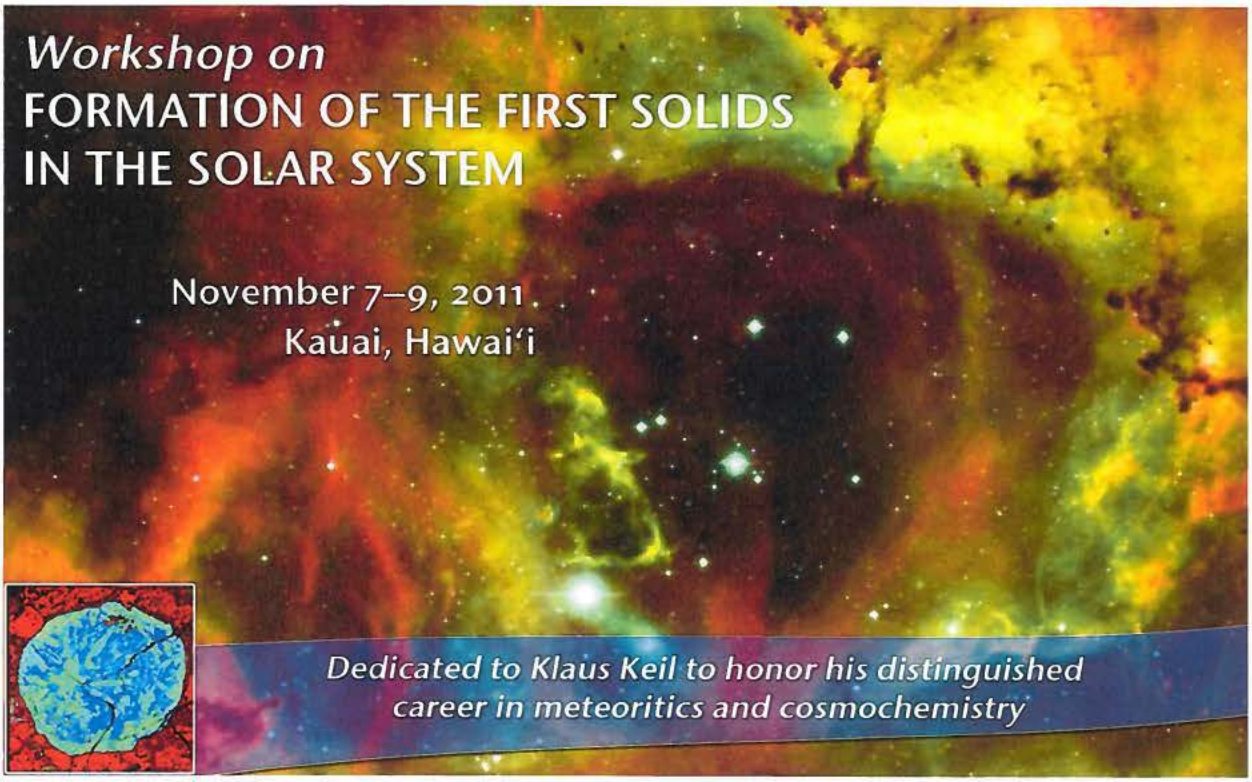

Program

LUNAR AND PLANETARY INSTITUTE

WORKSHOP ON
FORMATION OF THE FIRST SOLIDS IN THE SOLAR SYSTEM

November 7–9, 2011 • Kauai, Hawai'i

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GUIDE TO TECHNICAL SESSIONS

Sunday, November 6, 2011

4:00 p.m.	Poipu Foyer	Registration
5:30 p.m.	Ocean Lawn	Welcome Reception

Monday, November 7, 2011

8:30 a.m.	Poipu Ballroom	Formation of Solar Mass Stars and Formation of Chondritic Components
2:30 p.m.	Poipu Ballroom	Radial Transport, Thermal Processing, and Accretion of Solids in the Disk
7:30 p.m.	Koloa Room	Poster Session

Star Formation, Disk Evolution, Growth of Planets

Origin of Short-Lived Radionuclides and Nucleosynthetic Isotope Anomalies

Chondrites, Achondrites, and Their Components

Chronology of Chondritic Components

Chronology of Achondrites

Oxygen, Carbon, Nitrogen, Hydrogen, and Noble Gas Isotopes

Tuesday, November 8, 2011

8:30 a.m.	Poipu Ballroom	Abundances and Origin of Short-Lived Radionuclides
2:00 p.m.	Poipu Ballroom	Short-Lived Radionuclides: Origin and Chronology
5:30 p.m.	Ocean Lawn	Reception Honoring Klaus Keil

Wednesday, November 9, 2011

8:30 a.m.	Poipu Ballroom	Oxygen Isotopes and Redox Conditions
2:15 p.m.	Poipu Ballroom	Nucleosynthetic Isotope Anomalies

PROGRAM

Monday, November 7, 2011
FORMATION OF SOLAR MASS STARS AND
FORMATION OF CHONDRITIC COMPONENTS
8:30 a.m. Poipu Ballroom

Chair and Discussion Leader: Jonathan Williams

8:30 a.m. Scott E. R. D. *
Welcome

8:35 a.m. Williams J. P. *
Introduction to Session

8:40 a.m. Schönke J. * Trieloff M. [INVITED] (15 Minutes)
Collapse of the Protosolar Molecular Cloud Core: The First Accretion Period and Constraints on CAI Formation **[#9059]**

9:00 a.m. Basu S. * Vorobyov E. I. [INVITED] (15 Minutes)
Circumstellar Disk Evolution, Clump Formation, and its Effects on Planet Formation **[#9097]**

9:20 a.m. Keller L. P. * Messenger S. Nittler L. R. [INVITED] (15 Minutes)
Starting Composition of the Solar System Solids and Processing of Dust in the Interstellar Medium **[#9110]**

9:40 a.m. Bradley J. P. * (10 minutes)
Investigation of Atomic and Electronic Structure of Primitive and Synthesized Amorphous Silicates Using High-Resolution Electron Energy-Loss Spectroscopy (HREELS) **[#9147]**

9:55 a.m. Stroud R. M. * Chisholm M. F. Heck P. R. Alexander C. M. O'D. Nittler L. R. (10 minutes)
Constraining the Origin of Meteoritic Nanodiamond Residues with Single-Atom Sensitivity Electron Microscopy **[#9033]**

10:10 a.m. Richter F. M. * Davis A. M. Mendybaev R. A. [INVITED] (20 Minutes)
Chemical and Isotopic Fractionation During Formation of Refractory Inclusions: Observations, Experiments, and Theoretical Considerations **[#9099]**

10:40 a.m. COFFEE BREAK

11:00 a.m. Schwander D. * Berg T. Schönhense G. Ott U. Palme H. (10 minutes)
Refractory Metal Nuggets in Carbonaceous Chondrites are Early Solar Nebula Condensates **[#9070]**

11:15 a.m. Alexander C. M. O'D. * Cuzzi J. [INVITED] (15 Minutes)
Solving the Chondrule Mystery: Not There Yet **[#9152]**

11:35 a.m. Tachibana S. * Takigawa A. Nagahara H. Ozawa K. [INVITED] (15 Minutes)
Condensation and Gas-Solid Experiments of Minerals in Protoplanetary Disk Conditions: Implications for Formation of Chondritic Components **[#9135]**

11:55 a.m. Grossman L. * Fedkin A. V. Simon S. B. [INVITED] (15 Minutes)
FeO in Chondritic Olivine: Implications for fO_2 **[#9035]**

12:15 p.m. GENERAL DISCUSSION

12:30 p.m. LUNCH in the Garden Pavilion

Monday, November 7, 2011
RADIAL TRANSPORT, THERMAL PROCESSING,
AND ACCRETION OF SOLIDS IN THE DISK
2:30 p.m. Poipu Ballroom

Chair and Discussion Leader: Jeff Cuzzi

2:30 p.m. Ciesla F. J. * Yang L. Boley A. C. Cuzzi J. N. [INVITED] (15 Minutes)
Radial Transport and Survival of Refractory Inclusions in the Protoplanetary Disk **[#9044]**

2:50 p.m. Jacquet E. * Gounelle M. Fromang S. (10 minutes)
Dead Zones and Their Role in CAI Preservation **[#9006]**

3:05 p.m. Hu R. * (10 minutes)
Radial Transport of First Solids of the Solar System by X-Winds **[#9061]**

3:20 p.m. Boley A. C. * Ciesla F. (10 minutes)
Transient Clumps and High-Temperature Processing in the Outer Disk **[#9076]**

3:35 p.m. Johansen A. * Youdin A. N. Lithwick Y. [INVITED] (15 Minutes)
Rapid Accretion of Large Planetesimals by Gravitational Instabilities **[#9080]**

3:55 p.m. Pan L. Padoan P. * [INVITED] (10 Minutes)
Turbulent Clustering of Protoplanetary Dust and Planetesimal Formation **[#9024]**

4:10 p.m. COFFEE BREAK

4:30 p.m. Asphaug E. * Jutzi M. Movshovitz N. [INVITED] (15 Minutes)
Chondrule Formation by Pairwise Accretion of Melted Planetesimals **[#9131]**

4:50 p.m. Chaussidon M. * Rollion-Bard C. Gurenko A. Luu T. -H. [INVITED] (15 Minutes)
Search for Planetary Fragments in Chondrules from the Allende Chondrite **[#9081]**

5:10 p.m. Walsh K. J. * Morbidelli A. Raymond S. N.
O'Brien D. P. Mandell A. M. [INVITED] (15 Minutes)
Depletion and Excitation of the Asteroid Belt by Migrating Planets **[#9151]**

5:30 p.m. Morris M. A. * Boley A. C. Desch S. J. Athanassiadou T. (10 minutes)
Chondrule Formation in Eccentric Planetary Embryo Bow Shocks **[#9082]**

5:45 p.m. Lin D. N. C. * Gritschneider M. Gong M. Murray S. D.
Baruteau C. Yin Q. Z. [INVITED] (10 Minutes)
Chronology of CAI's and Chondrules: From Supernova-Induced Collapse of the Protosolar Cloud to the Epoch of Jupiter Formation in an Evolving Solar Nebula **[#9078]**

Monday, November 7, 2011
POSTER SESSION: STAR FORMATION, DISK EVOLUTION, GROWTH OF PLANETS
6:00 p.m. Koloa Room

Haugboelle T. Nordlund A. Padoan P.
Zooming in on Star Formation **[#9116]**

Testi L. Ricci L. Natta A. Trotta F.
Observational Constraints on Disk Evolution and the Initial Steps Towards Planet Formation **[#9001]**

Williams J. P.
Astronomical Evidence for the Rapid Growth of Millimeter Sized Particles in Protoplanetary Disks **[#9041]**

Birnstiel T. Windmark F. Dullemond C. P. Klahr H.
Growth and Transport of Dust Grains — How to Cross the Meter Size Barrier **[#9063]**

Alexander C. J.
Modeling the Nascent Solar Nebula for Material to be Measured with Rosetta at Comet 67P/Churyumov-Gerasimenko **[#9017]**

Cooper J. R. Dalle Ore C. M. Emery J. P.
A Spitzer-Based Classification of TNOs **[#9025]**

Haack H. Michelsen R. Stober G. Keuer D. Singer W. Williams I.
CM Chondrites from Comets? — New Constraints from the Orbit of the Maribo CM Chondrite Fall **[#9100]**

Day S. J. Thompson S. P. Evans A. Parker J. E.
Amorphous Silicates as Precursors for Cosmic Carbonates **[#9016]**

Wooden D. H. Lindsay S. S.
Crystalline Silicates in Comets: Modeling Irregularly-Shaped Forsterite Crystals and its Implications on Condensation Conditions **[#9145]**

Matson D. L. Johnson T. V. Castillo-Rogez J. C. Thomas P. C.
Evolution of Planetesimals Accreted in the Early Solar System **[#9039]**

Johnson T. V. Mousis O. Lunine J. I. Madhusudhan N.
Early Solids in Planetary Systems: Effects of Stellar Composition on Silicates and Ices in Planetesimals **[#9011]**

Haghighipour N. Scott E.
The Effect of Giant Planet Formation on the Origin and Scattering of Iron Meteorites Parent Bodies **[#9124]**

Rubie D. C. Frost D. J. Palme H.
Meteorites, Composition of the Earth and Early Accreting Material in the Inner Solar System **[#9015]**

Monday, November 7, 2011
POSTER SESSION: ORIGIN OF SHORT-LIVED RADIONUCLIDES AND NUCLEOSYNTHETIC ISOTOPE ANOMALIES
6:00 p.m. Koloa Room

Yu T. Meyer B. S.
On Production of Neutron-Rich Iron-Group Isotopes in Simple Models of Dense Thermonuclear Supernovae **[#9119]**

Maddison S. T. Lugaro M. Doherty C. L. Siess L. Liffman K. Lattanzio J. C.
Production of Short-Lived Radionuclides in Super Asymptotic Giant Branch Stars **[#9046]**

Marhas K. K.
Late Irradiation Scenario for Production of Short Lived Nuclides **[#9136]**

Liffman K. Pignatelle F. C. Maddison S. T. Brooks G.
^{26}Al and the Formation of Inner Disk Atmosphere Condensates **[#9010]**

Meyer B. S. The L.-S. El Eid M. F.
On Aluminum-26 in Mass Loss from Massive Stars **[#9148]**

Davis D. W. Matzner C. Barlet G. Charles C.
Can the Early Solar System be Explained with Present Cosmochemical Data? **[#9153]**

Monday, November 7, 2011
POSTER SESSION: CHONDRITES, ACHONDRITES, AND THEIR COMPONENTS
6:00 p.m. Koloa Room

Nuth J. A. Johnson N. M.
Production of Organic Grain Coatings by Surface Mediated Reactions and the Consequences of this Process for Meteoritic Constituents **[#9021]**

Flynn G. J.
Organic Grain Coatings in Primitive Interplanetary Dust: A Timescale for Formation of Solar System Organic Matter **[#9143]**

Kropf A. Libourel G.
Condensation of the First Solar System Solids — Experimental Approaches **[#9057]**

Pignatale F. C. Maddison S. T. Liffman K. Brooks G.
High Temperature Condensates and Water Vapour in the Solar Nebula **[#9048]**

Harries D. Berg T. Palme H. Langenhorst F.
The Fate of Metals in the Solar Nebula: From Condensation to Oxidation, Sulfidation, and Nitridation **[#9071]**

Han J. Brearley A. J.
Complex Thermal Histories of CAI-Like Objects in Amoeboid Olivine Aggregates from the ALHA 77307 CO3.0 Chondrite: Constraints from Microstructural Studies by TEM **[#9084]**

Fagan T. J. Washio M. Yuhara S. Sasamoto C. Takeda K. Yakame S.
A Comparison of Recrystallization in CAIs from the CV3 Allende with Igneous Phenocrysts from Terrestrial Metavolcanic Rocks **[#9068]**

Marin-Carbonne J. McKeegan K. D. Davis A. M. MacPherson G. J. Mendybaev R. A. Richter F. M.
O, Si, and Mg Isotopic Compositions of FUN Inclusion Vigarano 1623-5 **[#9083]**

Paque J. M. Burnett D. S. Beckett J. R. Guan Y.
The Role of Inclusions in Mantle Melilite: Refractory Lithophile Trace Element Compositions in a Type B1 CAI **[#9087]**

Russell S. S. Kearsley A. T.
A Corundum-Rich CAI from the Murchison (CM2) Meteorite **[#9098]**

Lehner S. W. Petaev M. I. Buseck P. R.
Evidence for Silicate Sulfidation in EH3 Metal-Sulfide Nodules **[#9079]**

Doyle P. M. Berry A. J. Schofield P. F. Mosselmans J. F. W. Smith A. D. Scholl A. Young A. T.
The Oxidation State of Ti in Synthetic and Meteoritic Hibonite, with Application to Early Solar Nebula Processes **[#9034]**

Giannini M. Boffa Ballaran T. Langenhorst F. Bischoff A.
TEM-EELS Measurements of Titanium Oxidation State in Hibonites **[#9067]**

Simon S. B. Sutton S. R. Grossman L.
The Growing Inventory of Ti^{3+}-Bearing Objects from the Solar Nebula **[#9074]**

Zhang J. Davis A. M. Dauphas N. Hashimoto A.
Titanium Isotope Mass-Dependent Fractionation During Evaporation of $CaTiO_3$ **[#9094]**

Ruzicka A. M. Hutson M. L.
Agglomeratic Olivine (AO) Objects: Melting of Dust to Create Type II Chondrules **[#9020]**

Palme H. Hezel D. C.
Matrix-Chondrule Relationship and the Origin of Chondrules **[#9088]**

Hood L. L. Weidenschilling S. J.
Chondrule and CAI Formation in the Context of the Planetesimal Nebular Shock Model **[#9105]**

Sanders I. S. Scott E. R. D.
Chondrules, Chondrites, and Chondritic Asteroids: Planetary Building Blocks or Debris from Planetary Accretion? **[#9126]**

Metzler K.
Chondrite Accretion Within Hours to a Few Days After Chondrule Formation? Textural Evidence from UOC's **[#9111]**

Nakamura-Messenger K. Keller L. P. Messenger S. Rubin A. E. Choi B. -G. Petaev M. I. Clemett S. J. Zhang S. Rahman Z. Oikawa K.
The Formation of Wassonite: A New Titanium Monosulfide Mineral in the Yamato 691 Enstatite Chondrite **[#9091]**

Miura Yas.
Osumilite-Like Phases in Chondrules of the Nio Chondrite, Yamaguchi, Japan **[#9013]**

Jogo K. Krot A. N. Nagashima K.
Metamorphosed Clasts in the CV Carbonaceous Chondrite Breccias Mokoia and Yamato- 86009: Evidence for Strong Thermal Metamorphism on the CV Parent Asteroid **[#9113]**

Heck P. R. Pellin M. J. Davis A. M. Isheim D. Seidman D. N. Hiller J. Mane A. Elam J. Savina M. R. Auciello O. Stephan T. Stadermann F. J. Lewis J. Zhao X. Daulton T. L. Floss C.
Atom-Probe Tomographic Analyses of Allende and Synthetic Nanodiamonds **[#9096]**

Brenker F. E. Schmitz S. Vekemans B. de Samber B. Schoonjans T. Vincze L.
Quantitative Sub Micron Synchrotron XRF Analyses of REE Pattern. A Future Perspective **[#9140]**

Mikouchi T. McKay G. A. Miyamoto M. Sugiyama K.
Olivine Xenocrysts in Quenched Angrites: The First "Differentiated" Materials in the Solar System? **[#9142]**

Patzer A. McSween H. Y.
Symplectic Assemblages in Howardites: First Results **[#9002]**

Monday, November 7, 2011
POSTER SESSION: CHRONOLOGY OF CHONDRITIC COMPONENTS
6:00 p.m. Koloa Room

Mishra R. K. Chaussidon M.
Records of Early Solar System Events Inferred from Al-Mg Isotope Systematics in CV3 Chondrites **[#9072]**

Wakaki S. Itoh S. Tanaka T. Yurimoto H.
High-Precision Al-Mg Dating of Anorthite in a Compound Object of CAI-Chondrule from Allende **[#9050]**

Marks N. E. Borg L. E. Hutcheon I. D. Clayton R. N. Mayeda T. K.
Evidence from Rb-Sr Systematics for a 4.25 Ga Disturbance in Al3S4, an Allende CAI **[#9141]**

Olsen M. B. Krot A. N. Connelly J. N. Larsen K. Paton C. B. Wielandt D. Schiller M. Bizzarro M.
Mineralogy, Petrography and Pb-Pb Isotope Systematics of a Type II Allende Chondrule **[#9060]**

Monday, November 7, 2011
POSTER SESSION: CHRONOLOGY OF ACHONDRITES
6:00 p.m. Koloa Room

Wimpenny J. Yin Q. Amelin Y.
Vesta's Primordial Differentiation as Revealed by ^{26}Al-^{26}Mg Isotope Systematics of Bulk Eucrites and Diogenites **[#9075]**

Coath C. D. Elliott T. Kurahashi E. Pogge von Strandmann P. A. E.
Advances in High Precision Mg Isotope Measurements by MC-ICPMS on Small Samples **[#9005]**

Nyquist L. E. Bogard D. D.
Disturbances in the Isotopic Record of Asuka 881394 **[#9037]**

Yamakawa A. Yamashita K. Yin Q.-Z.
Ultra High Precision Mn-Cr Isotope Systematics of Select Meteorites **[#9093]**

Hublet G. Debaille V. Wimpenny J. Yin Q-Z.
In Search of ^{26}Mg Excess in Achondrites: Forensics of the Heat Source for the Primordial Igneous Differentiation **[#9058]**

Zhou Q. Yin Q.-Z. Wu F. Y. Li Q. L. Li X. H. Liu Y. Tang G. Q.
U-Pb and Pb-Pb Dating of Small Zircons in Eucrites **[#9107]**

Yamaguchi A. Mikouchi T. Ito M. Shirai N. Ebihara M. Barrat J. A. Messenger S.
Heating Experiments of a Basaltic Eucrite and Implications for Chronology and Geochemistry **[#9137]**

Spivak-Birndorf L. J. Wadhwa M. Janney P. E.
^{60}Fe-^{60}Ni Chronology of Angrites **[#9130]**

Holst J. C. Paton C. Bizzarro M.
Are Non-Radiogenic W Isotope Anomalies in Iron Meteorites Analytical Artifacts? **[#9065]**

Amelin Y. Wimpenny J. Yin Q.-Z.
Angrite Lu-Hf Whole Rock Data Provide no Direct Support to Accelerated Decay of ^{176}Lu by Supernova Irradiation **[#9014]**

Debaille V. Yin Q.-Z. Amelin Y.
The Role of Phosphates for the Lu-Hf Chronology of Meteorites **[#9066]**

Monday, November 7, 2011
POSTER SESSION: OXYGEN, CARBON, NITROGEN, HYDROGEN, AND NOBLE GAS ISOTOPES
6:00 p.m. Koloa Room

Gaidos E.
Carbon, Oxygen, and the Desertification of the Galaxy **[#9051]**

Nuth J. A. III Paquette J. A. Farquhar A. Johnson N. M.
Lightning Processing of Dust in the Solar Nebula **[#9019]**

Lyons J. R.
Oxygen Isotopic Ratios Resulting from CO Self-Shielding **[#9108]**

Lyons J. R.
The First Goo: Photochemistry and the Observed Enrichment of O, C, and N Isotopes in Meteorite IOM **[#9121]**

Abe K. Sakamoto N. Krot A. N. Yurimoto H.
Abundance of Cosmic Symplectite in Acfer 094 Carbonaceous Chondrite **[#9043]**

Joswiak D. J. Brownlee D. E. Nakashima D. Ushikubo T. Kita N. T. Matrajt G.
Wide Distribution of Oxygen Isotopic Compositions in Stardust Fragments: Wild 2 Materials from ^{16}O- and ^{17,18}O-Rich Nebular Reservoirs **[#9118]**

Katayama J. Itoh S. Yurimoto H.
Oxygen Isotopic Zoning of Reversely Zoned Melilite Crystals in a Fluffy Type A CAI from Vigarano Meteorite **[#9031]**

Kawasaki N. Sakamoto N. Yurimoto H.
Oxygen Isotopic Compositions and Chemical Zoning of Melilite Crystals in Fluffy Type A CAI from Efremovka CV3 Chondrite. **[#9042]**

Matzel J. E. P. Simon J. I. Hutcheon I. D. Weber P. K. Jacobsen B. Wasserburg G. J.
Oxygen Isotope Zoning in an Allende CAI, EGG-6 **[#9149]**

Zhang A. C. Itoh S. Yurimoto H. Sun Q. Wang R. C.
Formation of the Sapphirine-Bearing Al-Rich Chondrule in the DaG 978 Carbonaceous Chondrite: Preliminary Mineralogical and Oxygen Isotopic Results **[#9028]**

Nagashima K. Krot A. N. Huss G. R.
Oxygen-Isotope Compositions of Chondrules and Matrix Grains in Kakangari Chondrite **[#9049]**

Itoh S. Russell S. S. Yurimoto H.
Oxygen and Al-Mg Isotopic Compositions of a Barred Olivine Chondrule from NWA 1152 C3-Ungrouped Chondrite **[#9133]**

Nunn M. H. Thiemens M. H.
Oxygen Isotopic Analyses of Water in Bjurböle and Murchison Meteorites **[#9009]**

Jogo K. Krot A. N. Nagashima K.
Oxygen-Isotope Compositions of Fayalite and Magnetite in CV Carbonaceous Chondrites Asuka- 881317 and MET 00430: Implications for Sources of Water Ice on the CV and Ordinary Chondrite Parent Asteroids **[#9114]**

Marty B. Zimmermann L. Krot A. N.
Early Irradiation as a Possible Cause of ^{15}N Enrichment in Early Solar System Matter **[#9129]**

Füri E. Marty B. Assonov S. S.
Constraints on the Origin of Nitrogen Isotope Variations in Planetary Objects from Single Grain Analysis of Luna 24 Soils **[#9030]**

Hashiguchi M. Kobayashi S. Yurimoto H.
Occurrences of Deuterium-Rich Organic Matters in NWA 801 CR2 Chondrite **[#9012]**

Amari S. Matsuda J.
Noble Gas Analysis of Q-Rich Fractions from Saratov (L4) **[#9092]**

Clay P. L. Busemann H. El Goresy A. Wieler R.
Petrography, Chemistry and Noble Gas Cosmochemistry of Nebula Condensate Djerfisherite in Enstatite Chondrites **[#9125]**

Beyersdorf-Kuis U. Trieloff M. Cartwright J. A. Bennett J. Ott U.
Cosmogenic Noble Gases in Chondrules from CV and CR Chondrites **[#9077]**

Tuesday, November 8, 2011
ABUNDANCES AND ORIGIN OF SHORT-LIVED RADIONUCLIDES
8:30 a.m. Poipu Ballroom

Chair and Discussion Leader: Ian Hutcheon

8:30 a.m. Hutcheon I. D. *
Introduction to Session

8:35 a.m. Krot A. N. * Makide K. Nagashima K. Huss G. R. Ciesla F. J. Hellebrand E. Gaidos E. Young L. [INVITED] (10 Minutes)
Heterogeneous Distribution of ^{26}Al at the Birth of the Solar System **[#9045]**

8:50 a.m. Liu M.-C. * Chaussidon M. Göpel C. Lee T. (10 Minutes)
A Heterogeneous Solar Nebula as Sampled by CM Hibonite Grains **[#9069]**

9:05 a.m. Wasserburg G. J. * Wimpenny J. Yin Q.-Z. (10 minutes)
Mg Isotopic Heterogeneity, Al-Mg Isochrons, and Canonical $^{26}Al/^{27}Al$ in the Early Solar System **[#9038]**

9:20 a.m. Larsen K. K. Trinquier A. Paton C. Schiller M. Wielandt D. Ivanova M. A. Connelly J. N. Nordlund Å. Krot A. N. Bizzarro M. * [INVITED] (10 Minutes)
Heterogeneous Distribution of ^{26}Al in the Solar Protoplanetary Disk **[#9053]**

9:35 a.m. Boss A. P. * [INVITED] (10 Minutes)
Injection and Homogenization of Short-Lived Radionuclides in the Solar System **[#9003]**

9:50 a.m. Vasileiadis A. * Nordlund Å. Bizzarro M. (10 minutes)
Enhanced Abundance of ^{26}Al and ^{60}Fe in Giant Molecular Clouds **[#9101]**

10:05 a.m. COFFEE BREAK

10:25 a.m. Telus M. * Huss G. R. Tachibana S. Goswami J. [INVITED] (10 Minutes)
The Initial Abundance of ^{60}Fe in the Inner Solar System: Evidence from Chondrules **[#9127]**

10:40 a.m. Quitté G. * Albarède F. (10 minutes)
Initial Distribution of ^{60}Fe and Heterogeneity of Ni Isotopes in the Early Solar System **[#9123]**

10:55 a.m. Wadhwa M. * Tang H. Spivak-Birndorf L. Dauphas N. Janney P. [INVITED] (10 Minutes)
Initial Abundance of ^{60}Fe in the Inner Solar System: Evidence from Differentiated Asteroids **[#9132]**

11:10 a.m. Tang H. * Dauphas N. (10 Minutes)
Origin and Homogeneity of ^{60}Fe in the Solar System: Evidence from Achondrites and Unequilibrated Ordinary Chondrites **[#9146]**

11:25 a.m. Gounelle M. * Meynet G. [INVITED] (15 Minutes)
Short-Lived Radionuclides in the Early Solar System Trace Sequential Star Formation **[#9008]**

11:45 a.m. Wasserburg G. J. * [INVITED] (15 Minutes)
Review of AGB Stars as Possible Sources of Short Lived Nuclei in the Early Solar System **[#9150]**

12:05 p.m. GENERAL DISCUSSION

12:30 p.m. LUNCH in the Garden Pavilion

Tuesday, November 8, 2011
SHORT-LIVED RADIONUCLIDES: ORIGIN AND CHRONOLOGY
2:00 p.m. Poipu Ballroom

Chair and Discussion Leader: Andrew Davis

2:00 p.m. Desch S. J. * Pan L. Scannapieco E. (10 minutes)
Clumpy Supernova Ejecta Injection into Forming Planetary Systems **[#9117]**

2:15 p.m. Kita N. T. * Ushikubo T. MacPherson G. J. Jacobsen B. Yin Q-Z. Nagashima K. Krot A. N. Kurahashi E. Jacobsen S. B. [INVITED] (15 Minutes)
Al-Mg Chronology of Refractory Inclusions and Chondrules **[#9109]**

2:35 p.m. Connolly H. C. Jr. * Young E. D. Huss G. R.
Nagashima K. Beckett J. R. [INVITED] (10 Minutes)
Exploring the Disturbance of Al-Mg Isotopes in the First Solar System Rocks: Calcium-Rich, Aluminum-Rich Inclusions **[#9128]**

2:50 p.m. Bouvier A. * Brennecka G. A. Wadhwa M. [INVITED] (15 Minutes)
Absolute Chronology of the First Solids in the Solar System **[#9054]**

3:10 p.m. Connelly J. N. * Bizzarro M. Ivanova M. Krot A. N. [INVITED] (15 Minutes)
Towards a New Absolute Chronology for the Early Solar System **[#9056]**

3:30 p.m. Kleine T. * Burkhardt C. Sprung P. Kruijer T. [INVITED] (15 Minutes)
Hafnium-Tungsten Ages of Meteorites **[#9138]**

3:50 p.m. COFFEE BREAK

4:10 p.m. Amelin Y. * Yin Q.-Z. Krot A. N. Bouvier A. Wadhwa M.
Kleine T. Nyquist L. E. [INVITED] (15 Minutes)
Progress in the Early Solar System Chronology: A Sketch of an Ever-Changing Landscape **[#9055]**

4:30 p.m. Wielandt D. * Nagashima K. Krot A. N. Huss G. R.
Ivanova M. A. Bizzarro M. (10 minutes)
Evidence for Multiple Sources of ^{10}Be in the Early Solar System **[#9029]**

4:45 p.m. Jacobsen B. * Matzel J. Hutcheon I. D. Krot A. N. Yin Q.-Z. Nagashima K. (10 minutes)
Late-Stage Formation of Short-Lived Radionuclides by Solar Energetic Particle Irradiation in the Early Solar System **[#9144]**

5:00 p.m. Lin Y. * El Goresy A. Boyet M. Feng L. Zhang J. Hao J. (10 minutes)
Earliest Solid Condensates Consisting of the Assemblage Oldhamite, Sinoite, Graphite and Excess ^{36}S in Lawrencite from Almahata Sitta MS-17 EL3 Chondrite Fragment **[#9040]**

5:15 p.m. Mouginis-Mark P. *
A Tribute to Klaus Keil

5:20 p.m. Taylor G. J. *
Klaus Keil — An Appreciation

RECEPTION HONORING KLAUS KEIL
5:30 p.m. Ocean Lawn

Wednesday, November 9, 2011
OXYGEN ISOTOPES AND REDOX CONDITIONS
8:30 a.m. Poipu Ballroom

Chair and Discussion Leader: Trevor Ireland

8:30 a.m. McKeegan K. D. * [INVITED] (15 Minutes)
The Oxygen Isotopic Composition of the Sun: Implications for Nebula Chemistry **[#9104]**

8:50 a.m. Ozima M. * Yamada A. Podosek F. A. (10 minutes)
The Isotopic Composition of the Primordial Noble Gas in the Early Solar System and its Implications on Solar Oxygen Isotopic Composition **[#9004]**

9:05 a.m. Young E. D. * Gounelle M. [INVITED] (15 Minutes)
The Stable Isotope Case for Supernova Enrichment of the Solar System Birth Environment by Sequential Star Formation **[#9090]**

9:25 a.m. Nittler L. R. * Gaidos E. [INVITED] (10 Minutes)
Galactic Chemical Evolution and the Oxygen-Isotope Composition of the Solar System **[#9122]**

9:40 a.m. Thiemens M. H. * [INVITED] (15 Minutes)
Oxygen Isotope Formation by CO-Self Shielding and UV Photodissociation of CO: Theoretical Calculations, Experiments, and Observations **[#9022]**

10:00 a.m. Shi X. * Yin Q.-Z. Ng C.-Y. (10 minutes)
Further Testing of "Self-Shielding" Model for the Oxygen Isotope Evolution in the Early Solar Nebula — Isotope Composition of Atomic Oxygen from CO Pre-Dissociation **[#9023]**

10:15 a.m. COFFEE BREAK

10:35 a.m. Yurimoto H. * Nagashima K. [INVITED] (15 Minutes)
Evolution of Oxygen Isotope Reservoirs in the Early Solar System **[#9134]**

10:55 a.m. Ushikubo T. * Tenner T. J. Hiyagon H. Kita N. T. (10 minutes)
Lifetime of ^{16}O-Rich Oxygen Isotope Reservoir in the Solar Nebula **[#9086]**

11:10 a.m. Park C. * Wakaki S. Sakamoto N. Kobayashi S. Yurimoto H. (10 minutes)
Oxygen Isotopic Variations of Melilite Crystals in a Type A CAI from Allende **[#9032]**

11:25 a.m. Simon J. I. * Matzel J. E. P. Simon S. B. Weber P. K. Grossman L.
Ross D. K. Hutcheon I. D. (10 minutes)
A Spectrum of Oxygen Isotopic Zoning Profiles in CAIs Records Varying Exposure to Distinct Protoplanetary Disk Environments **[#9047]**

11:40 a.m. Ireland T. R. * (15 Minutes)
Oxygen Isotope Tracing of the Early Solar System **[#9026]**

12:00 a.m. Libourel G. * Villeneuve J. Chaussidon M. (10 minutes)
Type I–Type II Chondrule Connections: New Experimental Constraints on Chondrule Formation **[#9115]**

12:15 p.m. Petaev M. I. * Lehner S. W. Buseck P. R. (10 minutes)
Processing of Silicates in S-Rich Systems: Implications for the Origin of Enstatite Chondrites **[#9095]**

12:30 p.m. LUNCH in the Garden Pavilion

Wednesday, November 9, 2011
NUCLEOSYNTHETIC ISOTOPE ANOMALIES
2:15 p.m. Poipu Ballroom

Chair and Discussion Leader: Bradley Meyer

2:15 p.m. Meyer B. S. * (10 Minutes)
Introduction to Session

2:25 p.m. Papanastassiou D. A. * [INVITED] (10 Minutes)
The Importance of Isotope Anomalies: A Historical Perspective **[#9112]**

2:40 p.m. Brennecka G. A. * Borg L. E. Wadhwa M. [INVITED] (10 Minutes)
Barium, Neodymium, and Samarium Isotopic Composition of CAIs: Nucleosynthetic Anomalies? **[#9036]**

2:55 p.m. Burkhardt C. * Kleine T. Wieler R. [INVITED] (10 Minutes)
Nucleosynthetic Mo and W Isotope Anomalies in Allende CAI **[#9102]**

3:10 p.m. Schiller M. * Paton C. Bizzarro M. [INVITED] (10 Minutes)
Correlated Ca Isotope Anomalies in Bulk Solar System Materials **[#9064]**

3:25 p.m. Chen H. W. * Lee T. Lee D. C. Chen J. C. [INVITED] (10 Minutes)
Ca Isotopic Anomalies in CAIs **[#9089]**

3:40 p.m. Paton C. * Schiller M. Bizzarro M. (10 minutes)
^{84}Sr Anomalies in Bulk-Rock Meteorites and Acid-Leachates of the Ivuna CI Chondrite **[#9062]**

3:55 p.m. COFFEE BREAK

4:15 p.m. Qin L. * Nittler L. R. Alexander C. M. O'D.
Wang J. Carlson R. W. [INVITED] (10 Minutes)
Distribution and Carriers of Cr Isotopic Anomalies in the Inner Solar System **[#9073]**

4:30 p.m. Schönbächler M. * Akram W. M. Williams N. H. Leya I. (10 minutes)
Nucleosynthetic Heterogeneities of Neutron-Rich Isotopes in Calcium Aluminum-Rich Inclusions and Bulk Solar System Materials **[#9085]**

4:45 p.m. Bizzarro M. * Nordlund Å. [INVITED] (20 Minutes)
Short-Lived Radionuclide Abundances and Nucleosynthetic Isotope Anomalies in Bulk Planetary Materials: Is There a Connection? **[#9052]**

5:15 p.m. Warren P. H. * (10 minutes)
Stable-Isotope Anomalies: The Dichotomous Nature of Solar System Materials and Limits on Mixing Within the Nascent Solar System **[#9027]**

5:30 p.m. MacPherson G. J. * Bullock E. S. Krot A. N. Nagashima K.
Kita N. T. Ushikubo T. [INVITED] (10 Minutes)
Four CAI Conundrums: Challenges for Future Work **[#9103]**

5:45 p.m. MEETING ADJOURNS

PRE-REGISTERED PARTICIPANTS

Abe, Kenichi	Hokkaido University
Alexander, Claudia	Jet Propulsion Laboratory
Amari, Sachiko	Washington University
Amelin, Yuri	The Australian National University
Bajo, Ken-ichi	Hokkaido University
Barlet, Guillaume	University of Toronto
Basu, Shantanu	University of Western Ontario
Beyersdorf-Kuis, Uta	Max-Planck-Institut für Chemie
Birnstiel, Tilman	LMU, Munich
Bizzarro, Martin	Centre for Star and Planet Formation
Boley, Aaron	University of Florida
Borg, Lars	Lawrence Livermore National Laboratory
Boss, Alan	Carnegie Institution
Bouvier, Audrey	University of Minnesota
Bradley, John	Lawrence Livermore National Laboratory
Brenker, Frank	Goethe University
Brennecka, Gregory	Arizona State University
Brown, Robert	University of Arizona
Brownlee, Don	University of Washington
Bruce, Geoffrey	California, USA
Busemann, Henner	University of Manchester
Charles, Christopher	University of Toronto
Chaussidon, Marc	CRPG-CNRS
Chen, Hsin-Wei	Academia Sinica
Ciesla, Fred	University of Chicago
Coath, Christopher	University of Bristol
Connolly, Harold	City University of New York
Cooper, Jennifer	Cornell University
Creech, John	Victoria University of Wellington
Davis, Andrew	The University of Chicago
Davis, Donald	University of Toronto
Day, Sarah	Keele University
Debaille, Vinciane	Université Libre de Bruxelles
Doyle, Patricia	Imperial College London
Ebata, Shingo	Sapporo, Japan
Fagan, Timothy	Waseda University
Füri, Evelyn	CNRS, Nancy
Gaidos, Eric	University of Hawaii
Grossman, Karen Lee	Guest
Grossman, Lawrence	University of Chicago
Guan, Yunbin	Caltech
Haack, Henning	University of Copenhagen
Han, Jangmi	University of New Mexico
Harries, Dennis	BGI, University of Bayreuth
Hashiguchi, Minako	Hokkaido University
Haugboelle, Troels	University of Copenhagen
Heck, Philipp	The Field Museum of Natural History
Holden, Peter	Australian National University
Holst, Jesper	Centre for Star and Planet Formation
Hu, Renyu	Massachusetts Institute of Technology
Hublet, Geneviève	Université Libre de Bruxelles
Huss, Gary	University of Hawaii at Manoa
Huss, Jacquiline	Guest

Hutson, Melinda	Portland State University
Ireland, Trevor	Australian National University
Ishii, Hope	Lawrence Livermore National Laboratory
Itoh, Shoichi	Hokkaido University
Ivans, Inese	The University of Utah
Jacobsen, Stein	Harvard University
Jacquet, Emmanuel	Muséum National d'Histoire Naturelle de Paris
Jadhav, Manavi	University of Hawaii
Jilly, Christine	University of Hawai'i at Manoa
Jogo, Kaori	University of Hawai'i at Manoa
Kastner, Ethan	University of Hawaii
Katayama, Juri	Sapporo, Japan
Kawasaki, Noriyuki	Hokkaido University
Keil, Klaus	University of Hawaii at Manoa
Kennedy, Allen	Curtin University
King, Penny	University of New Mexico
Kita, Noriko	University of Wisconsin
Kropf, Andreas	CRPG/CNRS Nancy
Krot, Alexander	University of Hawaii at Manoa
Lee, Typhoon	Academia Sinica
Libourel, Guy	CNRS CRPG
Liffman, Kurt	CSIRO
Lin, Douglas	University of California, Santa Cruz
Lin, Yangting	Institute of Geology and Geophysics, CAS
Liu, Ming-Chang	Academia Sinica
Luu, Tu-Han	CRPG-CNRS Nancy
Lyons, James	UCLA
MacPherson, Glenn	Smithsonian Institution
Maddison, Sarah	Swinburne University
Marin-Carbonne, Johanna	University of California, Los Angeles
Martel, Linda	University of Hawaii
Matzel, Jennifer	LLNL
McKeegan, Kevin	University of California, Los Angeles
Meech, Karen	University of Hawaii
Mendybaev, Ruslan	University of Chicago
Messenger, Scott	NASA Johnson Space Center
Metzler, Knut	Universität Münster
Meyer, Bradley	Clemson University
Mikouchi, Takashi	University of Tokyo
Mishra, Ritesh Kumar	CRPG-CNRS
Morris, Melissa	Arizona State University
Nagashima, Kazuhide	University of Hawaii
Nittler, Larry	Carnegie Institution of Washington
Nunn, Morgan	UC San Diego
Nuth, Joseph	NASA
Ogliore, Ryan	University of Hawai'i at Manoa
Olsen, Mia Bjørg	Natural History Museum
Ozima, Minoru	University of Tokyo
Padoan, Paolo	ICREA & University of Barcelona
Palme, Herbert	Senckenberg Frankfurt
Papanastassiou, Dimitri	Jet Propulsion Laboratory, Caltech
Paque, Julie	California Institute of Technology
Park, Changkun	Hokkaido University
Paton, Chad	University of Copenhagen
Patzer, Andrea	University of Tennessee
Petaev, Michail	Harvard University

Pignatale, Francesco	Swinburne University of Technology
Pilger, Eric	University of Hawaii
Quitté, Ghylaine	CNRS - ENS de Lyon, France
Rubie, David	University of Bayreuth
Russell, Sara	Natural History Museum
Ruzicka, Alexander	Portland State University
Salmeron, Raquel	The Australian National University
Sanders, Ian	Trinity College Dublin
Schiller, Martin	University of Copenhagen
Schonbachler, Maria	The University of Manchester
Schönke, Johannes	Heidelberg University
Schwander, Daniel	Max Planck Institute for Chemistry
Scott, Anneliese	Guest
Scott, Edward	University of Hawaii at Manoa
Sears, Derek	NASA Ames Research Center
Shi, Xiaoyu	UC Davis
Simon, Justin	NASA Johnson Space Center
Simon, Steven	The University of Chicago
Steinke-Stephan, Petra	University of Chicago
Stephan, Thomas	University of Chicago
Stroud, Rhonda	Naval Research Lab
Tang, Haolan	The University of Chicago
Taylor, G. Jeffrey	University of Hawaii
Telus, Myriam	University of Hawaii at Manoa
Testi, Leonardo	European Southern Observatory
Thiemens, Mark	UCSD
Thomas, Twyla	Guest
Ushikubo, Takayuki	Univ. of Wisconsin-Madison
Vasileiadis, Aristodimos	University of Copenhagen
Vogt, Elizabeth	Guest
Wadhwa, Meenakshi	Arizona State University
Wakaki, Shigeyuki	Hokkaido University
Wang, Ying	Purple Mountain Observatory
Warren, Paul	UCLA
Wielandt, Daniel	Centre for Star and Planet Formation
Williams, Jonathan	University of Hawaii
Wimpenny, Josh	University of California Davis
Wooden, Diane	NASA Ames Research Center
Yamaguchi, Akira	National Institute of Polar Research, Tokyo
Yamakawa, Akane	University of California, Davis
Yin, Qing-Zhu	University of California at Davis
Young, Edward	University of California Los Angeles
Yu, Tianhong	Clemson University
Yurimoto, Hisayoshi	Hokkaido University
Zhang, Aicheng	Hokkaido University
Zhang, Junjun	University of Chicago