Program First Stars VI

Sunday, March 01
18:00 Welcome cocktail @ Diego de Almagro Hotel

Monday, March 02

Session 1: Population III stars: formation, IMF, multiplicity and evolution

08:15 - 09:00 Registration
09:00 - 09:30 Welcome
09:30 - 10:00 Invited talk (Formation of First Stars with various masses - Shingo Hirano)
10:00 - 10:15 Contributed talk (Primordial chemistry -Simon Glover)
10:15 - 10:30 Contributed talk (The influence of streaming velocities and Lyman-Werner radiation on the formation of Pop. III stars. - Anna Schauer)
10:30 - 11:00 Coffee break
11:00 - 11:30 Highlight talk (Primordial & Extremely Metal-poor high-mass star formation in the early universe. -Takashi Hosokawa)
11:30 - 11:45 Contributed talk (The impact of magnetic field strength on the primordial initial mass function -Piyush Sharda)
11:45 - 12:00 Contributed talk (Radiation feedback in a high resolved Population III star formation - Ondrej Jaura)
12:00 - 12:15 Contributed talk (Number of population III stars per minihalo. - Hajime Susa)

Session 2: Transition to second-generation star formation

12:15 - 12:30 Contributed talk (Is there significance to the critical metallicities? - Britton Smith)
12:30 - 14:30 Lunch
14:30 - 15:00 Invited talk (The mass transition from Population III to Population II stars - Gen Chiaki)
15:00 - 15:30 Highlight talk (Metal mixing in primordial minihaloes. - Mattis Magg)
15:30 - 16:00 Coffee break
16:00 - 16:15  Contributed talk (*Metallicity Dependence of Massive Star Formation.* - Kei Tanaka)

16:15 - 16:30  Contributed talk (*Star-cluster formation in low-metallicity massive clouds under radiative feedback.* - Hajime Fukushima)

**Session 3: First supernovae and gamma-ray bursts; Pop. III star fates; abundance patterns at high redshift**

16:30 - 17:00  Invited talk (*The First cosmic explosions.* - Daniel Whalen)

**Tuesday, March 03**

09:00 - 09:15  Contributed talk (*Rotations of first stars: need of a theory anchored on present-day observational constraints.* - Georges Meynet)

09:15 - 09:30  Contributed talk (*State-of-the-art of chemodynamical simulations: The origin of elements and their evolution in galaxies.* - Chiaki Kobayashi)

09:30 - 09:45  Contributed talk (*Rotation, explosion and nucleosynthesis in early massive stars and the abundances of metal-poor stars.* - Arthur Choplin)

09:45 - 10:00  Contributed talk (*Chemical abundances in metal-poor quasar absorption line systems.* - Trystyn Berg)

10:00 - 10:15  Contributed talk (*Probing the high redshift Universe with Long Gamma-Ray Bursts.* - Emeric Le Floc)

10:15 - 10:30  Contributed talk (*Discrimination of heavy elements originating from Pop. III stars in z = 3 intergalactic medium.* - Takanobu Kirihara)

10:30 - 11:00  Coffee break

11:00 - 11:30  Highlight talk (*Searches for Population III pair-instability supernovae with upcoming near-infrared transient surveys* - Takashi Moriya)

**Session 4: Gravitational waves as a new probe of the high-z Universe**

11:30 - 12:00  Invited talk (*Remnants of first stars for gravitational wave sources.* - Tomoya Kinugawa)

12:00 - 12:30  Highlight talk (*Exploring new frontiers with gravitational waves from massive black holes.* - Tilman Hartwig)

12:30 - 14:30  Lunch

14:30 - 14:45  Contributed talk (*Gravitational wave signals of Pop. III-seeded binary black holes formed by dynamical capture.* - Boyuan Liu)
Session 5: Stellar archeology as a powerful probe of the high-z Universe

<table>
<thead>
<tr>
<th>Time</th>
<th>Talk Type</th>
<th>Title</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>14:45 - 15:15</td>
<td>Highlight talk</td>
<td>Interpreting spectroscopic survey data for metal-poor stars with supernova yield models.</td>
<td>Miho Ishigaki</td>
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<tr>
<td>15:15 - 15:30</td>
<td>Contributed talk</td>
<td>Characterizing the origin and properties of the halo r-process star population with data collected by the R-Process Alliance.</td>
<td>Anna Frebel</td>
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<td>15:30 - 16:00</td>
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<td>Coffee break</td>
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<tr>
<td>16:00 - 16:15</td>
<td>Contributed talk</td>
<td>Looking for the first stars: back to the Lithium plateau.</td>
<td>David Aguado</td>
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<tr>
<td>16:15 - 16:30</td>
<td>Contributed talk</td>
<td>The age of Halo metal-poor stars.</td>
<td>Marica Valentini</td>
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<tr>
<td>16:30 - 16:45</td>
<td>Contributed talk</td>
<td>A search for the oldest stars in the inner galaxy with the Pristine survey.</td>
<td>Anke Arentsen</td>
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<tr>
<td>16:45 - 17:00</td>
<td>Contributed talk</td>
<td>Accurate abundances at the lowest detected iron abundance: SMSS 1605-1443.</td>
<td>Thomas Nordlander</td>
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<td>20:00</td>
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<td>Conference dinner</td>
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Wednesday, March 04

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<tr>
<th>Time</th>
<th>Talk Type</th>
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<tbody>
<tr>
<td>09:00 - 09:15</td>
<td>Contributed talk</td>
<td>The most metal-poor stars in the Large Magellanic Cloud.</td>
<td>Kevin Schlaufman</td>
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<tr>
<td>09:15 - 09:30</td>
<td>Contributed talk</td>
<td>The Oldest Extremely Metal-poor Stars.</td>
<td>Henrique Reggiani</td>
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<tr>
<td>09:30 - 09:45</td>
<td>Contributed talk</td>
<td>The Ancient Bulge Globular Clusters.</td>
<td>Doug Geisler</td>
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<tr>
<td>09:45 - 10:00</td>
<td>Contributed talk</td>
<td>Spectroscopic follow-up of metal poor candidates from the Pristine survey with Narval at TBL.</td>
<td>Aroa del Mar Matas Pinto</td>
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<tr>
<td>10:00 - 10:15</td>
<td>Contributed talk</td>
<td>The extreme enhancement in carbon, nitrogen, and oxygen of the iron-poor star J0815+4729.</td>
<td>Jonay González Hernández</td>
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<tr>
<td>10:15 - 10:30</td>
<td>Contributed talk</td>
<td>Constraining nucleosynthesis in CEMP-s progenitors using Fluorine.</td>
<td>Aldo Mura-Guzman</td>
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<td>10:30 - 11:00</td>
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<td>Coffee break</td>
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<tr>
<td>11:00 - 11:15</td>
<td>Contributed talk</td>
<td>Life on the fast lane: chemistry of Halo (?) stars on extreme orbits.</td>
<td>Luca Sbordone</td>
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<tr>
<td>11:15 - 11:30</td>
<td>Contributed talk</td>
<td>Clues on the lithium meltdown in dwarf stars using the red giant branch stars.</td>
<td>Lorenzo Monaco</td>
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11:30 - 11:45  Contributed talk *(Near-field cosmology with metal-poor stars: Births and deaths of stars in the Magellanic Clouds. - Venu Kalari)*

Session 6: From the first galaxies to the epoch of reionization

11:45 - 12:15  Invited talk *(Probing cosmic dawn with the 21-cm signal. - Anastasia Fialkov)*

12:15 - 14:00  Lunch

14:00 - 20:00  Excursions (Lota / Reserva Nonguén)

Thursday, March 05

09:00 - 09:30  Highlight talk *(Physical and observable properties of the first galaxies and black holes. - John Wise)*

09:30 - 09:45  Contributed talk *(Galaxy formation in quasar fields during reionization. - Huanqing Chen)*

09:45 - 10:00  Contributed talk *(A new formation channel for globular clusters. - Yeou Chiou)*

10:00 - 10:15  Contributed talk *(Modelling X-ray feedback from binaries at the early universe. - Nina Sanches Sartorio)*

10:15 - 10:30  Contributed talk *(Understanding the physical conditions of high-redshift (z ~ 6) metal absorption lines. - Teresita Suarez Noguez)*

10:30 - 11:00  Coffee break

11:00 - 11:30  Highlight talk *(Probing Cosmic Dawn with current and future facilities. - Nicolas Laporte)*

Session 7: Dwarf galaxies as a potential probe of the early Universe

11:30 - 12:00  Invited talk *(Signatures of the First Stars in Relics of the First Galaxies - Alexander Ji)*

12:00 - 12:15  Contributed talk *(Detection of a spatially extended population of extremely metal-poor stars in the Tucana II ultra-faint dwarf galaxy. - Anirudh Chiti)*

12:15 - 12:30  Contributed talk *(What conditions shape the Eu abundances of stars in UFDs? - Yuta Tarumi)*

12:30 - 14:30  Lunch

14:30 - 15:00  Highlight talk *(Dwarf galaxies and their hidden treasures. - Stefania Salvadori)*
15:00 - 15:15 Contributed talk (Constraining the low-mass end of the first stars. - Martina Rossi)
15:15 - 15:30 Contributed talk (Dynamical relics of the ancient galactic halo. - Zhen Yuan)
15:30 - 16:00 Coffee break
16:00 - 16:15 Contributed talk (The stellar populations of high-redshift dwarf galaxies. - Viola Gelli)

Session 8: Formation, growth and observational constraints on the first supermassive black holes

16:15 - 16:45 Invited talk (The first quasars in cosmological hydrodynamic simulations. - Tiziana Di Matteo)
16:45 - 17:00 Contributed talk (Life and death of supermassive stars. - Lionel Haemmerle)
17:45 - 19:45 Inclusive astronomy workshop at hotel Diego de Almagro

Friday, March 06

09:00 - 09:30 Highlight talk (Stellar black holes at cosmic dawn. - Felix Mirabel)
09:30 - 10:00 Highlight talk (Ezequiel Treister)
10:00 - 10:15 Contributed talk (Super-Eddington gas accretion onto intermediate-mass seed black holes. - Daisuke Toyouchi)
10:15 - 10:30 Contributed talk (Formation of the massive seed BHs in the low-metallicity environment. - Sunmyon Chon)
10:30 - 11:00 Coffee break
11:00 - 11:30 Highlight talk (Highlights of direct collapse black holes from the past decade - Muhammad Latif)
11:30 - 11:45 Contributed talk (Pulsational instability of very massive stars with various metallicities. - Daisuke Nakauchi)
11:45 - 12:00 Contributed talk (Making a supermassive star by stellar bombardment. - Hiromichi Tagawa)
12:00 - 12:15 Contributed talk (Formation of massive black hole seeds following collapse and fragmentation of atomic cooling halos. - Bastian Reinoso)

Session 9: Current and future surveys and observational facilities

12:15 - 12:30 Contributed talk (The R-Process Alliance – Progress and Preview. - Timothy Beers)
12:30 - 14:30 Lunch
14:30 - 15:00  Highlight talk (*Searching for the first generations of stars at high redshift with JWST.* - Andrew Bunker)
15:00 - 15:15  Contributed talk (*A global 21-cm Chilean experiment: MIST.* - Ricardo Bustos)
15:30 - 16:00  Coffee break
16:00 - 16:30  Highlight talk (Else Starkenburg)
16:30 - 16:45  Contributed talk (*The 4MOST Milky Way Halo High-Resolution Survey.* - Norbert Christlieb)
16:45 - 17:00  Award best posters & Farewell

### List of posters

- Alex Alarcon: A chemo-kinematic analysis of Leo I
- Bidisha Bandyopadhyay: Investigating Neutral Hydrogen Structures During The Epoch of Reionization using Fractal Dimension
- Shantanu Basu: The Mass Function of supermassive black holes in the direct collapse scenario
- Yashpal Bhulla: Detection of the thermonuclear X-ray bursts and dips from the X-ray binary 4U 1323-62
- Claudio Bravo: Investigating the 21 cm signal from the reionization epoch
- Corey Brummel-Smith: Children of the first star: birth from a Pop III supernova
- Li-Hsin Chen: Interpreting the abundance patterns of metal-poor stars with A-SLOTH
- Igor Chernykh: Numerical simulation of astrochemical problems
- Lia Corazza: Chemical evolution in the early universe and the abundances of Globular Clusters
- Patricio Correa: Star formation History in the Outskirt of the SMC
- Marcelo Cortes Vergara: Stellar collisions in flattened and rotating Pop. III systems
- Sukra Dahal: IRAS Survey on ambient ISM around C-rich AGB star
- Arpan Das: Luminosity Functions of Supermassive Black Holes at high redshifts
- Vanesa Diaz: Impact of radiation backgrounds on the formation of massive black holes
- Mariano Dominguez: First stars and reionization on ULDM models
- Andres Escala: The Role of Gas Fragmentation During the Formation of Supermassive Black Holes
- Amanda Ibsen: Applying Deep Learning to Super Luminous Supernovae
- Leopoldo Infante: tbd
- Lochan Khanal: Dust interaction with ISM around AGB star.
- Kazutaka Kimura: Evolution of Accretion Disk around Pop III Star: comparisons between models and simulations
- Daegene Koh: Lagrangian Coordinates in an Eulerian Framework
- Mihir Kulkarni: A critical mass for Pop. III stars: dependence on Lyman-Werner radiation, baryon/dark-matter streaming, and redshift
- Igor Kulikov: The numerical simulation of supernovae Ia by means a new AVX-512 optimizes hydrodynamic code
- Nimisha Kumari: Chemical properties of Blue Compact Dwarf Galaxies: local analogues of high-redshift galaxies
- Wei-Ting Liao: Large Scale Dynamo in a Primordial Accretion Flow {An Interpretation from Hydrodynamic Simulation
- Ryoki Matsukoba: Disk fragmentation and intermittent accretion onto supermassive stars
- Kazu Omukai: Ionization evolution in low-metallicity star-forming clouds
- Hyunbae Park: Impact of small-scale structure on the cosmic reionization
- Rafeel Riaz: Initial Mass Function (IMF) under the processes of fragmentation and accretion
- Lorenzo Roberti: Evolution, nucleosynthesis and explosion of zero and very low metallicity massive stars.
- Kenji Eric Sadanari: Magnetohydrodynamic effects on rst star formation
- Kazuhiro Shima: The Pop III disk fragmentation: disentangling the numerical and physical effects
- Danielle Skinner: Lyman Werner background and Pop. III formation
- Francisca Soto Bravo: Compact Starburst Dwarf Galaxies at 150 MHz: Strong Magnetic Fields in Proxies for Proto-Galaxies.
- Paulina Troncoso: First detection obtained with the ALMA of the [N II] 122 m line emission from a galaxy group BRI 1202-0725 at z = 4.69
- Fernanda Urrutia Zapata: The formation of UCDs
- Anton Vikaeus: Predictions for JWST, Euclid and WFIRST
- Haruka Washinoue: Heating of Coronal Loops on Low-mass Pop III Stars
- Benjamin Wehmeyer: Galactic chemical evolution
- Gao-Yuan Zhang: NEI evolution in SNRs