



# Stellar Halos Across the Cosmos

Heidelberg, July 2-6

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## Talk Slots:

25' = 20' + 5' — 15' = 12' + 3' — 5' = 4' + 1'

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## Monday July 2

**08:30-09:10 Registration, coffee & sandwiches**

**09:10-09:15 Welcome and Logistics**

**09:15-11:00 Collective Review on Observational Tools and Techniques**

*Chair: Eric Bell*

- ~20' Steve Majeski: "Techniques and Surveys for the stellar halo of the Milky Way"
- ~20' Nicolas Martin: "Techniques and Surveys for the stellar halo of M31"
- ~20' Denija Crnojevic: "Resolved Stellar Populations beyond the Local Group"
- ~20' Bob Abraham: "Integrated Light"
- ~20' Magda Arnaboldi: "Observations of the Intra-cluster light"

**11:00-11:30 Coffee Break**

**11:30-12:30 The halos of MW and M31 (I/II)**

*Chair: Sarah Loebman*

- 15' Robyn Sanderson: "Science from synthetic stellar surveys"
- 15' Emily Cunningham: "HALO7D"
- 15' Adrian Price-Whelan: "Evidence for a disk origin for inner halo stellar structures"
- 15' Marius Cautun: "The aftermath of the Great Collision between our Galaxy and the LMC"

**12:30-14:00 Lunch**

**14:00-16:00 Collective Review on Theoretical Tools and Techniques**

*Chair: Ana Bonaca*

- ~25' Jorge Penarrubia: "Idealized and analytical models"
- ~25' Nicola Amorisco: "Controlled and N-body experiments"
- ~25' Andrew Cooper: "Cosmological N-body and tagging simulations; SAMs"
- ~25' Andrew Wetzel: "Cosmological hydrodynamics simulations"
- Discussion

**16:00-16:30 Coffee Break**

**16:30-18:00 Insights from Gaia**

*Chair: Hans-Walter Rix*

- 25' Rodrigo Ibata: "Selected results with Gaia DR2"
- 15' Sarah Loebman: "Beta dips in the Gaia era"
- 15' Sarah Bird: "Galactic Mass and Anisotropy Profile with LAMOST and Gaia"
- 15' Giuliano Iorio: "A first Gaia all-sky look to the Galactic stellar halo"
- 15' Khyati Malhan: "A new Substructure map of the Milky Way halo using STREAMFINDER"

## Tuesday July 3

### **09:00-10:20 The halos of MW and M31 (II/II)**

**Chair:** *Raja GuhaThakurta*

- 25' Karoline Gilbert: "The Halo of M31"
- 5' Christine Simpson: "Progenitors of the stellar halo in the Auriga simulations"
- 15' Thomas Guillaume: "Tracing the smooth stellar halo with BHBs"
- 15' Azi Fattahi: "The origin of the Galactic stellar halo anisotropy"
- 5' Nicolas Martin: "Mapping the metal-poor MW halo with the Pristine survey"
- 5' Nicola Amorisco: "Fuzzy dark matter, fuzzy GC streams"
- 5' Jorge Penarrubia: "The masses of the MW dwarfs"
- 5' GyuChul Myeong: "The Milky Way Halo in Action Space"

### **10:20-10:30 Organisation of Splinter meetings**

### **10:30-11:00 Coffee Break**

### **11:00-12:30 Census beyond the Local Group (I/II)**

**Chair:** *Enrichetta Iodice*

- 25' Antonela Monachesi: "Comparing results from the GHOSTS survey and the Auriga simulations"
- 5' Raúl Infante Sáinz: "Star counting versus integrated photometry techniques"
- 15' Michael Rich: "The Size of Galaxy Envelopes from the HERON Survey"
- 15' Jenny Greene: "Low Surface Brightness Galaxies with the Hyper Suprime-Camera Survey"
- 5' Denija Crnojevic: "Resolving the extended stellar halos of nearby galaxies: the wide-field PISCeS survey"
- 5' Javier Roman: "Pushing the surface brightness limits: PSF and galactic cirrus characterization"
- 5' In Sung Jang: "Quantifying the faint outskirts of M101 using resolved stars"
- 15' Alexie Leauthaud: "The Stellar Halos of Massive Galaxies"

### **12:30-14:00 Lunch**

### **14:00-15:30 Unconference Sessions: Topics TBD**

### **15:30-16:00 Coffee break**

### **16:00-16:30 Reports from Unconference Sessions**

**Chair:** *Rhea-Silvia Remus*

### **16:30-18:00 Satellites, Satellite Systems and the Stellar Halos of Dwarfs**

- 15' Carlos Frenk: "The imprint of cosmic reionisation in the halo of the Milky Way"
- 5' Erik Tollerud: "HI & Stars in Local Group Dwarfs: Is There a Missing dIrr Problem?"
- 5' Jason Sanders: "Tidal disruption of dwarf galaxies"
- 15' N. Garavito-Camargo: "LMC vs. MW: Effects on the stellar and dark matter halo of the MW"
- 15' Jeff Carlin: "Resolved Stellar Populations Around Local Volume LMC Stellar-Mass Galaxies"
- 5' Adam Smercina: "The Stellar Halo and Sparse Satellite Population of the 'Lonely Giant' M94"
- 5' Masahi Chiba: "Structures of the MW luminous and dark halos revealed from Subaru/HSC survey"
- 5' Behnam Javanmardi: "Dwarf Galaxy Survey with Amateur Telescopes (DGSAT)"

## Wednesday July 4

### **09:00-10:45 Lensing, dark matter, and mass modeling**

*Chair: Alexie Leauthaud*

25' Julien Laval: "Alternative models of Dark Matter"

5' Ling Zhu: "Dark matter fraction, internal rotation and velocity anisotropy from inner to outer halo"

25' Dennis Erkal: "Gaps in Streams"

5' Geraint Lewis: "The Need for Speed: Escape velocity and dynamical mass measurements of M31"

15' Ana Bonaca: "What are the tidal streams constraining?"

15' James Nightingale: "The Stellar Halos of Massive Ellipticals with Strong Gravitational Lensing"

15' Discussion

### **10:45-11:15 Coffee Break**

### **11:15-13:00 Lumpiness**

*Chair: Pierre-Alain Duc*

15' Ana-Roxana Pop: "Shell Galaxies: Halo Shapes, Formation Processes and Metallicity Signatures"

15' Eduardo Balbinot: "The Milky Way halo as seen by the Dark Energy Survey"

5' Kris Youakim: "A large-scale clustering analysis of substructure in the Milky Way halo"

5' Lauren Anderson: "4D Cold Stream Detection"

5' David Hendel: "A machine vision algorithm for tidal debris classification"

15' Michael Gregg: "Drilling through the M31 Halo near Mayall-II/G1"

15' Erin Kado-Fong: "Tidal Features in the HSC Subaru Strategic Program"

15' Discussion

### **13:00-14:30 Lunch**

### **14:00-15:15 Unconference Sessions: Topics TBD. Rooms: HdA Auditorium, HdA 308, HdA 310, MPIA 301**

### **15:15-15:45 Reports from Unconference Sessions**

*Chair: Michelle Collins*

### **15:45-16:15 Coffee Break**

### **16:15-18:00 Quantitative and qualitative diagnostics of galaxy assembly histories (I/II)**

*Chair: Michelle Collins*

25' Annalisa Pillepich: "Ex-situ vs. In-situ stars"

5' Alina Boecker: "Recovering the Accretion History of Galaxies from Integrated Spectra"

15' Rhea-Silvia Remus: "Connecting In-Situ and Accreted Populations to Global Stellar Halo Properties of Galaxies"

15' Emma Fernández-Alvar: "The Characterization of the Metal-rich Stellar Halo with Gaia DR2 and APOGEE"

15' Richard D'Souza: "Unravelling M31's accretion history"

15' Chervin F. P. Laporte: "Stellar disc streams as probes of the Galactic potential and satellite impacts."

15' Discussion

## Thursday July 5

### **09:00-10:45 Stellar halos of Massive Systems**

*Chair: Ortwin Gerhard*

25' Chris Mihos: "Intra cluster light in Virgo and beyond"

5' Lamiya Mowla: "Dragonfly Wide Field Survey: Intragroup Light"

15' Meng Gu: "Hierarchical Assembly of Stellar Envelopes in Galaxy Clusters"

15' Enrichetta Iodice: "Stellar halos and low surface brightness features from deep VST surveys"

5' Felipe Ardila: "A Consistent Comparison Between High Quality HSC data and Hydro Simulations"

5' Claudia Pulsoni: "Early-type galaxy survey with ePN.S: Kinematic diversity and angular momentum in the outer halos"

15' Mireia Montes: "Intracluster light: a luminous tracer for dark matter in clusters of galaxies."

15' Discussion

### **10:45-11:15 Coffee Break**

### **11:15-13:00 GCs as tracers of mass and assembly**

*Chair: Aaron Romanowsky*

25' Dougal Mackey: "Halo-GC connection"

5' Jisu Kang: "Globular Cluster Systems in the Giant Halo of the Sombrero Galaxy"

15' Joel Pfeffer: "The E-MOSAICS project"

5' Meghan Hughes: "Galactic Tidal Features and their star cluster populations with E-MOSAICS"

5' Christopher Usher: "Exploring Galaxy Formation Histories with Globular Cluster Stellar Populations"

15' Asher Wasserman: "GCs as Observational Probes of the Stellar and Dark Halos of Elliptical Galaxies"

15' Raja GuhaThakurta: "NGVS: GCs as tracers of the stellar halos of dwarf galaxies, ultra-diffuse galaxies, and the massive elliptical M87"

15' Discussion

### **13:00-14:10 Lunch**

### **14:10-14:30 Planetarium Show**

### **14:30-15:15 Unconference Sessions: Topics TBD. Rooms: HdA Auditorium, HdA 308, HdA 310, MPIA 301**

### **15:15-15:45 Reports from Unconference Sessions**

*Chair: Richard D'Souza*

### **15:45-16:15 Coffee Break**

### **16:30-18:15 Quantitative and qualitative diagnostics of galaxy assembly histories (II/II)**

*Chair: Richard D'Souza*

25' Eric Bell: "Connection between stellar halo properties and galaxies/halos assembly"

15' Rodrigo Cañas: "Diffuse stellar halos in state-of-the-art cosmological simulations of galaxy formation"

15' Aaron Romanowsky: "Chemo-dynamics and substructure in galaxy halos beyond the Local Group"

15' Prashin Jethwa: "Galaxy merger histories via integral of motion clusters"

15' Felix Schulze: "Connecting Outer Stellar Halo Kinematics to the Formation Histories of Early-Type Galaxies"

15' Daniel Thomas: "Stellar populations in galaxy haloes with SDSS-IV/MaNGA"

15' Discussion

### **19:00 Conference Dinner**

## Friday July 6

### 09:00-10:30 Ultra diffuse Galaxies

*Chair: Karoline Gilbert*

25' Pieter van Dokkum: "Ultra Diffuse Galaxies with Dragonfly"

5' Andrew Wetzel: "The origin of ultra-diffuse galaxies"

15' Michelle Collins: "Tidal interactions as a means of forming ultra diffuse galaxies"

15' Elisa Toloba: "Internal dynamics and dark matter halos of ultra-diffuse galaxies"

15' Sungsoon Lim: "A New Study of Globular Cluster Populations in Coma Ultra-Diffuse Galaxies"

15' Discussion

### 10:30-10:45 Census beyond the Local Group (II/II)

15' David Martinez Delgado: "Hidden Depths: A Search for Stellar Tidal Streams in the Local Universe with Deep Imaging"

### 10:45-11:15 Coffee Break

### 11:15-13:00 Census beyond the Local Group (II/II cont)

*Chair: Elisa Toloba*

25' Pierre-Alain Duc: "Outer "normal" haloes in integrated light"

5' Kevin McKinnon: "The Ubiquity of Stellar Halos in Virgo Cluster Galaxies"

15' Aaron Emery Watkins: "The Stellar and Gaseous Halo of M51"

15' Allison Merritt: "Observing stellar halos around Milky Way-like galaxies in Illustris-TNG"

5' Magda Arnaboldi: "Newly discovered Planetary Nebulae population in the outer disk and halo of M31"

15' Discussion

25' Colin Slater: "LSST"

### 13:00-14:00 Greetings, lunch, and end of the conference

#### Posters:

Moritz Fischer

A multi-dimensional atlas of in-situ vs. ex-situ stars from IllustrisTNG galaxies

Patrick Ondratschek

Systematic uncertainties in the measures of the stellar halo density profiles

Lisa-Marie Zessner

Inputs from IllustrisTNG stellar halos on the relation between metallicity gradients and assembly history

Colleen Gilhuly

The Dragonfly Edge-on Galaxies Survey

Nushkia Chamba

Stellar halos build-up as revealed by ultra-deep imaging

Max Sasserath

The mass assembly of massive galaxies and their ICL

Myung Gyoon Lee

Resolved Stellar Populations in Stellar Halos and Formation of Massive Galaxies

R. Michael Rich

The Halos and Environments of Nearby Galaxies Survey: New results on boxy bulges and two nearby galaxies with extended UV and HI emission

#### Posters in absentia:

Johanna Hartke

"Tracing the build-up of M49's extended halo and surrounding intra-group light with stellar kinematics"