Understanding the massive-star origin of our elements: A unified understanding of stellar yields
September 4-8, 2023

13:00 LUNCH
14:30 ASPECT TALK & DISCUSSION
Exploring different mass-loss descriptions in stellar evolution modelling
Joris Josiek
15:15 FOCUS DISCUSSION
Consequences on stellar yields when stars approach the Eddington Limit and cumulative effects of updated mass loss on stellar evolution
N.N.
16:00 COFFEE BREAK
16:30 REVIEW & DISCUSSION
The chemical enrichment of early Galaxies and self-polluting massive stars
Arpita Roy
17:15 DAY IV SUMMARY/DISCUSSION
Major yield suppliers in the massive star regime
(led by Vincent Bronner)
18:30 SOCIAL EVENT: DINNER AT IWH

Friday
10:00 REVIEW & DISCUSSION
Galactic Chemical Evolution modelling and the implementation of stellar yields
Chiaki Kobayashi
11:00 COFFEE BREAK
11:30 ASPECT TALK & DISCUSSION
Constraints on nucleosynthesis processes from chemical abundances of stars
Tadafumi Matsuno
12:15 BRAINSTORMING
Do we know the origin of our elements and what do we need to get better yields?
(led by Martyna Chruślińska)
13:00 LUNCH
14:30 FOLLOW-UP PROJECTS DISCUSSION AND PLANNING
16:00 COFFEE BREAK
16:30 BUFFER TIME FOR FURTHER DISCUSSIONS OR END OF WORKSHOP

Three Klaus-Georg and Sigrid Hengstberger Awards are bestowed annually on young scientists and scholars at Heidelberg University. The awards are intended to enable the recipients to present an interdisciplinary symposium at Internationales Wissenschaftsforum Heidelberg (iwh). The next deadline for applications is 1st April 2024.
Andreas Sander received this award in 2022.

ORGANISATION:
Andreas Sander (ZAH/AKI)

SPONSORED BY:
Klaus-Georg and Sigrid Hengstberger Award
Deutsche Forschungsgemeinschaft (DFG)
### Monday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>10:00</td>
<td><strong>Welcome &amp; Introduction</strong></td>
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</tbody>
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| 10:15 | **Opening Review**  
Chemical evolution of galaxies  
Martyna Chrušíńska                      |
| 11:00 | **Coffee Break**                                                                  |
| 11:30 | **Review & Discussion**  
Calculating the chemical yields of massive stars  
Marco Limongi                          |
| 12:15 | **Aspect Talk & Discussion**  
Yields of very massive stars  
Erin Higgins                           |
| 13:00 | **Lunch**                                                                         |
| 14:30 | **Aspect Talk & Discussion**  
Yield diagnostics from multiple populations in clusters  
Genevieve Parmentier                   |
| 15:15 | **Aspect Talk & Discussion**  
Nucleosynthesis of binary-stripped stars  
Eva Laplace                            |
| 16:00 | **Coffee Break**                                                                  |
| 16:30 | **Aspect Talk & Discussion**  
To merge or not to merge? This is the question for shells, the fate and nucleosynthesis of massive stars.  
Raphael Hirschi (online)               |

#### Tuesday

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<thead>
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| 10:00 | **Review & Discussion**  
Approaching the endpoints of massive star evolution  
William R. Hix                          |
| 11:00 | **Coffee Break**                                                                  |
| 11:30 | **Aspect Talk & Discussion**  
p-process nucleosynthesis in core collapse supernovae  
Lorenzo Roberti                         |
| 12:15 | **Aspect Talk & Discussion**  
Insights on late stellar evolution from the Gravitational Wave black hole distribution  
Eva Laplace                             |
| 13:00 | **Lunch**                                                                         |
| 14:30 | **Review & Discussion**  
Nucleosynthesis from Neutron Star mergers  
Andreas Bauswein                        |
| 15:30 | **Focus Discussion**  
The impact of multi-dimensional super- and kilonova models on their nucleosynthesis yields  
N.N.                                   |
| 16:00 | **Coffee Break**                                                                  |
| 16:30 | **Aspect Talk & Discussion**  
A dust-free description of Red Supergiant mass loss  
N. Dylan Kee                           |

#### Wednesday

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| 10:00 | **Review & Discussion**  
Winds and mass loss of hot stars  
Jorick Vink                            |
| 11:00 | **Coffee Break**                                                                  |
| 11:30 | **Aspect Talk & Discussion**  
Observational constraints of mass loss at subsolar metallicity  
Varsha Ramachandran                    |
| 12:15 | **Aspect Talk & Discussion**  
Observations of binary-evolution products: Implications for the mass loss of envelope-stripped stars  
Daniel Pauli                           |
| 13:00 | **Lunch**                                                                         |
| 14:30 | **Review & Discussion**  
Winds and mass loss of cool stars  
Susanne Höfner                         |
| 15:30 | **Focus Discussion**  
Dust formation around massive stars  
N.N.                                   |
| 16:00 | **Coffee Break**                                                                  |
| 16:30 | **Aspect Talk & Discussion**  
The complexity and uncertainty of Wolf-Rayet mass loss  
Andreas Sander                         |

#### Thursday

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| 10:00 | **Review & Discussion**  
Radioactive Nuclides: A tracer of massive stars & supernovae in our solar system  
Mario Trieloff                          |
| 11:00 | **Coffee Break**                                                                  |
| 11:30 | **Aspect Talk & Discussion**  
What meteorites can tell us about stellar yields  
Jan Leitner                             |
| 12:15 | **Aspect Talk & Discussion**  
The manifold impact of massive star yields  
(led by Cormac Larkin)                 |
| 13:00 | **Lunch**                                                                         |
| 14:30 | **Review & Discussion**  
Metallicity and wind mass loss  
(led by Daniel Pauli)                  |
| 15:30 | **Social Event: Excursion to Philosophenweg**                                    |
| 16:00 | **Coffee Break**                                                                  |
| 16:30 | **Aspect Talk & Discussion**  
To merge or not to merge? This is the question for shells, the fate and nucleosynthesis of massive stars.  
Raphael Hirschi (online)               |