

MEMORIE DELLA SOCIETÀ ASTRONOMICA ITALIANA

Vol.88 n.3 2017

The AGB-Supernovae mass transition

Monte Porzio Catone, March 27-31, 2017

editors: A. Karakas, P. Ventura, F. Dell'Agli and M. Di Criscienzo

TABLE OF CONTENTS

<i>Index</i>	225
<i>Foreword</i>	231
<i>List of Participants</i>	233
Session I: AGB and SAGB modelling	
M. Lugaro, A. I. Karakas, D. A. García-Hernández, L. R. Nittler and the LUNA Collaboration <i>Cosmic chemistry from AGB stars and its dependence on the initial stellar mass</i>	237
A. I. Karakas and L. J. Shingles <i>The effect of enhanced helium abundances on the AGB-supernova mass transition</i>	244
J. C. Lattanzio, C. A. Tout, E. V. Neumerzhitckii, A. I. Karakas and P. Lesaffre <i>Overshoot Inwards from the Bottom of the Intershell Convective Zone in (S)AGB stars</i>	248
U. Battino <i>A simulation-based Convective-Boundary Mixing model for AGB star evolution and nucleosynthesis</i>	252
C. L. Doherty <i>Lives and deaths of Super-AGB stars</i>	256
G. Pastorelli, P. Marigo, L. Girardi, S. Rubele, A. Nanni, Y. Chen, A. Bressan, B. Aringer, M. Trabucchi, J. Montalban, D. Bladh and M. R. L. Cioni <i>Calibrating the TP-AGB phase through resolved stellar populations in the Small Magellanic Cloud</i>	262
Session II: EC/CC supernovae	
S. C. Leung and K. Nomoto <i>Effects of input Physics on the collapse condition of the oxygen-neon-magnesium core</i>	266

226		
I. Domingues, M. Giannotti, A. Mirizzi and O. Straniero <i>On the influence of axions on M_{up}</i>	270	
A. P. Nagy <i>Calculating the average opacity for core-collapse supernovae</i>	274	
A. Jerkstrand, T. Ertl, H. T. Janka and E. Müller <i>Supernovae from the $8\text{-}10 M_{\odot}$ range: the first spectral models for the emission-line phase</i>	278	
T. Suzuki <i>Roles of nuclear Physics on the final evolution of degenerate cores</i>	282	
B. Müller, S. Wanajo, H. Th. Janka, A. Heger, D. Gay and S. A. Sim <i>Simulations of Electron Capture and Low-Mass Iron Core Supernovae</i>	288	
L. Siess and U. Lebreuilly <i>The binary channels to electron capture Supernovae</i>	294	
A. Tolstov, S. Jones, K. Nomoto and S. Blinnikov <i>Supernovae from 8.8 and 9.5 solar mass stars: multicolor light curve simulations</i>	298	
Session III: Type Ia supernovae		
P. Hoeflich, S. Chakraborty, W. Comaskey, A. Fisher, B. Hristcov, D. Collins, T. R. Diamond, P. Dragulin, E. Y. Hsiao, B. Sadler <i>Signatures of Progenitors of Type Ia Supernovae</i>	302	
C. Abate <i>What is the role of wind mass transfer in the progenitor evolution of Type Ia Supernovae?</i>	308	
M. Kromer, S. Ohlmann and F. K. Röpke <i>Simulating the observed diversity of type Ia supernovae</i>	312	
G. M. Halabi, R. G. Izzard, C. A. Tout, A. S. Jermyn and R. Cannon <i>2DStars: A two-dimensional stellar evolution code</i>	319	
B. Wang <i>Binary population synthesis for the core-degenerate scenario of SN Ia progenitors</i>	322	
Session IV: Observations of AGB stars and supernovae		
M. L. Boyer <i>Observations of AGB and SAGB stars</i>	326	
R. Dorda, I. Negueruela, C. González-Fernández and H. M. Tabernero <i>Disentangling massive AGB stars and red supergiants</i>	332	
D. A. García-Hernández <i>Spectroscopic surveys of massive AGB and super-AGB stars</i>	336	

K. Justtanont, S. Müller, M. J. Barlow, D. Engels, D. A. García-Hernández, M. Groenewegen, M. Matsuura, H. Olofsson and D. Teyssier <i>Mass loss from an extreme OH/IR star: OH 26.5+0.6</i>	342
I. McDonald <i>Observationally decoding the mechanisms driving mass loss from AGB stars</i>	346
M. A. T. Groenewegen and G. C. Sloan <i>Mass-loss rates and luminosities of evolved stars in the Magellanic Clouds</i>	350
J. Th. van Loon <i>Observed properties of red supergiant and massive AGB stars populations</i>	354
C. Abia, O. Straniero and P. Ventura <i>Isotopic ratios of C, O and light element abundances in AGB stars undergoing Hot Bottom Burning</i>	360
R. Raddi <i>Progeny of super-AGB stars in the era of Gaia</i>	364
I. Negueruela, J. Alonso-Santiago, H. M. Tabernero, A. Marco, N. Castro and R. Dorda <i>Open clusters as laboratories for the AGB/SN mass transition</i>	368
T. Kaminski, K. M. Menten, R. Tylenda, N. A. Patel and J. M. Winters <i>The 17th century eruption of CK Vul. Was it a massive AGB stars?</i>	373
E. Lagadec <i>Mission and ground based facilities for the observations of AGB, super AGB and massive stars</i>	377

Session V: Dust from AGB stars and supernovae

F. Dell'Agli <i>Modelling dust production from AGB stars: open challenges, uncertainties and new discoveries</i>	383
L. Mattsson and P. Ventura <i>Improved implementation of dust-driven winds and dust formation in models of AGB evolution: effects of pulsation and gas-pressure forcing</i>	389
A. Nanni, P. Marigo, M. A. T. Groenewegen, B. Aringer, G. Pastorelli, S. Rubele, L. Girardi, A. Bressan, S. Bladh <i>Estimating dust production rate of carbon-rich stars in the Small Magellanic Cloud</i>	393
A. Bevan, M. J. Barlow and D. Milisavljevic <i>Dust masses in the ejecta of SN 1993J, SN 1987A, SN 1980K and Cas A from modelling their red-blue optical line profile asymmetries</i>	397

Session VI: The role of AGB stars and supernovae on the host system

228		
D. Yong <i>The chemical enrichment in the early Galaxy</i>	401	
F. D'Antona <i>The role of super-AGB stars and supernovae for the formation of Globular Clusters</i>	406	
G. Cescutti and C. Kobayashi <i>The chemical signature of SNIax in the stars of Ursa minor?</i>	412	
K. Krafton and G. C. Clayton <i>CSM Interaction and Dust Formation in SN 2010jl</i>	416	
R. Valiante, L. Gioannini, R. Schneider, F. Matteucci, F. Dell'Agli and M. Di Criscienzo <i>The relative role of AGB stars and SNe as the first cosmic dust polluters</i>	420	
Session VI: Poster		
N. Burtebayev, J. T. Burtebayeva, T. Zholdybayev, M. Nassurlla, Zh. Kerimkulov, N. Amangeldi, Ye. Kok, B. Mauyey, A. S. Aimaganbetov, C. Spitaleri, S. B. Sakuta <i>Study of the elastic scattering of ^{20}Ne ions on ^{16}O nuclei at energy below the Coulomb barrier</i>	424	
M. Carlos and J. Meléndez <i>The rise of AGB stars on the Galactic Halo</i>	428	
G. Cescutti, N. Nishimura, R. Hirschi, T. Rauscher, J. W. den Hartogh and A. St. J. Murphy <i>The s-process nucleosynthesis: impact of the uncertainties in the nuclear physics determined by Monte Carlo variations</i>	432	
S. A. Hashemi, A. Javadi, J. Th. van Loon <i>AGB stars as tracers to IC 1613 evolution</i>	436	
N. Burtebayev, J. T. Burtebayeva, A. Duisebayev, T. Zholdybayev, M. Nassurlla, Zh. Kerimkulov, N. Amangeldi, A. Morzabayev, Ye. Kok, C. Spitaleri, S. B. Sakuta, L. I. Galanina <i>Alpha cluster transfer in the elastic scattering of ^{13}C ions on ^9Be nuclei</i>	440	
R. Nesci, H. Henke, C. Rossi, T. Tuvikene, M. Bagaglia <i>AGB variables in the field of Gamma Cas</i>	444	
T. Nozawa <i>Overall dust input from core-collapse supernovae in the Galaxy</i>	447	
V. Pérez-Mesa, O. Zamora, D. A. García-Hernández, B. Plez, A. Manchado, A. I. Karakas, M. Lugaro <i>Exploring circumstellar effects on the Li abundances in massive Galactic AGB stars</i>	451	
G. Rau, J. Hron, C. Paladini, B. Aringer, P. Marigo, K. Eriksson <i>Observational constraints for C-rich AGB stars</i>	455	

T. Szalai

A rummage in the Spitzer Heritage Archive: searching for signs of circumstellar interaction in supernovae

459

P. A. M. van Hoof, F. Herwig, S. Kimeswenger, G. C. Van de Steene, A. Avison, A.

A. Zijlstra, M. Hajduk, L. Guzman-Ramirez and P. R. Woodward

The i process in the post-AGB star V4334 Sgr

463

