

Table of Contents

Preface	xi
Organizing committee	xiii
Conference photograph	xiv
Conference participants	xvi
Dedication	xviii
 Section A. NORMAL A-STARS	
<i>Chair: Werner W. Weiss</i>	
IR: The physical properties of normal A-stars	1
<i>S.J. Adelman</i>	
IR: Standard model atmospheres and non-LTE effects	13
<i>J. Kubát, D. Korčáková</i>	
CP: NLTE wind models of A supergiants	23
<i>J. Krtička & J. Kubát</i>	
CP: Stellar model atmospheres with magnetic line blanketing	29
<i>S. Khan, O. Kochukhov, D. Shulyak</i>	
CP: A spectral study of Vega: A rapidly-rotating pole-on star	35
<i>G. Hill, A.F. Gulliver, S.J. Adelman</i>	
Panel discussion A	43
<i>S.J. Adelman</i>	
 Section B. STELLAR EVOLUTION, ROTATION, BINARITY	
<i>Chair: Nikolay Piskunov</i>	
IR: Stellar evolution	47
<i>A. Noels, J. Montalbán, C. Maceroni</i>	
IP: Mass loss, meridional circulation and turbulence in contemporary stellar evolution models	59
<i>S. Talon</i>	
IP: Pre-Main-Sequence A-type stars	69
<i>M. Marconi, F. Palla</i>	
IP: Binarity as a tool for determining the physical properties and evolutionary aspects of A-stars	81
<i>M. Yıldız</i>	
CP: Effective mass: A new concept in stellar astrophysics based on the internal rotation, and its place in the A- and B-star puzzle	89
<i>M. Yıldız</i>	
CP: First signatures of strong differential rotation in A-type stars	95
<i>A. Reiners, F. Royer</i>	

CP: Magnetorotational instability in Ap star envelopes	103
<i>R. Arlt</i>	
CP: Rotational velocity distributions of A-type stars	109
<i>F. Royer, J. Zorec, A.E. Gómez</i>	
Panel discussion B	115
<i>A. Noels, J. Montalbán, C. Maceroni</i>	
 Section C. CONVECTION IN STARS	
<i>Chair: J.D. Landstreet</i>	
IR: Convection in stars	119
<i>F. Kupka</i>	
IP: Observations of convection in A-type stars	131
<i>B. Smalley</i>	
IP: Numerical simulations of convection in A-stars	139
<i>B. Freytag, M. Steffen</i>	
CP: Simulations of core convection and resulting dynamo action in rotating A-type stars	149
<i>M.K. Browning, A.S Brun, J. Toomre</i>	
CP: 3D-simulation of the outer convection-zone of an A-star	155
<i>R. Trampedach</i>	
CP: Thermohaline convection and metallic fingers in polluted stars	161
<i>S. Vauclair</i>	
Panel discussion C	167
<i>F. Kupka</i>	
 Section D. DIFFUSION AS THE MECHANISM OF ELEMENT SEGREGATION	
<i>Chair: C.R. Cowley</i>	
IR: Atomic diffusion in stellar surfaces and interiors	173
<i>G. Michaud</i>	
IP: Diffusion in magnetic fields	185
<i>G. Alecian</i>	
IP: Modelling of stratified atmospheres of CP-stars	193
<i>F. LeBlanc, D. Monin</i>	
CP: Multicomponent stellar winds and chemical peculiarity in A stars	201
<i>J. Krtićka, J. Kubát</i>	
CP: Abundances of A/F and Am/Fm stars in open clusters as constraints to self-consistent models including transport processes	209
<i>R. Monier, O. Richard</i>	
CP: Surface abundances of Am stars as a constraint on rotational mixing	215
<i>O. Richard, S. Talon, G. Michaud</i>	

Panel discussion D	221
<i>G. Michaud</i>	
 Section E. MAGNETIC FIELDS	
<i>Chair: S. Bagnulo</i>	
IR: Magnetic fields of A-type stars	225
<i>G. Mathys</i>	
IP: Stellar magnetic fields: the view from the ground and from space	235
<i>G.A. Wade</i>	
IP: Magnetic fields in A stars.	245
<i>D. Moss</i>	
CP: Vertical and horizontal abundance structures of the roAp star HD 24712 ..	253
<i>T. Lüftinger, O. Kochukhov, T. Ryabchikova, I. Ilyin, W.W. Weiss</i>	
Panel discussion E	259
<i>G. Mathys</i>	
 Section F. CHEMICALLY PECULIAR STARS	
<i>Chair: D.W. Kurtz</i>	
IR: The CP Stars, an overview: Then and now	265
<i>C.R. Cowley, D.J. Bord</i>	
IP: Observations of magnetic CP stars	283
<i>T. Ryabchikova</i>	
IP: Observations of nonmagnetic CP stars: crossing boundaries.	291
<i>G.M. Wahlgren</i>	
CP: A search for SB2 systems among selected Am binaries	301
<i>I.Kh. Iliev, M. Feňovčík, J. Budaj, J. Žižňovský, J. Zverko, I. Barzova, I. Stateva</i>	
CP: The variable light curves of some mCP stars	307
<i>D.M. Pyper, S.J. Adelman</i>	
CP: NLTE ionization equilibrium of Nd II and Nd III in cool A and Ap stars ..	315
<i>L.I. Mashonkina, T.A. Ryabchikova, A.N. Ryabtsev</i>	
Panel discussion F	323
<i>C.R. Cowley</i>	
 Section G. PULSATING VARIABLES	
<i>Chair: H. Shibahashi</i>	
IR: Pulsations of A stars	325
<i>L.A. Balona</i>	
IP: δ Scuti and γ Doradus stars.	335
<i>M. Breger</i>	

IP: Some recent discoveries in roAp stars	343
<i>D.W. Kurtz, V.G. Elkin, G. Mathys, J. Riley, M.S. Cunha, H. Shibahashi, E. Kambe</i>	
CP: Pulsating pre-Main sequence stars in young open clusters.	353
<i>K. Zwintz, M. Marconi, T. Kallinger, W.W. Weiss</i>	
CP: Excitation of the oscillations in roAp stars: Magnetic fields, diffusion, and winds	359
<i>M.S. Cunha, S. Théado, S. Vauclair</i>	
CP: New approaches to solve the old Blazhko puzzle in RR Lyrae stars	367
<i>K. Kolenberg</i>	
Panel discussion G	373
<i>L.A. Balona</i>	
 Section H. EVOLVED A-TYPE STARS	
<i>Chair: S.J. Adelman</i>	
IR: Evolved A-type stars	379
<i>M. Parthasarathy</i>	
IP: Horizontal branch A- and B-type stars in globular clusters	395
<i>S. Möhler</i>	
IP: Blue metal-poor stars	403
<i>G.W. Preston, C. Sneden</i>	
IP: A supergiants	411
<i>N. Przybilla, F. Bresolin, K. Butler, A. Kaufer, R.P. Kudritzki, K.A. Venn</i>	
Panel discussion H	419
<i>S.J. Adelman, M. Parthasarathy</i>	
 Section I. THE A-STAR LABORATORY	
<i>Chair: F. Kupka</i>	
IR: A stars as physics laboratories.	423
<i>J.D. Landstreet</i>	
IP: Diffusion and magnetic field effects on stellar surfaces	433
<i>O. Kochukhov</i>	
IP: The λ Bootis stars	443
<i>E. Paunzen</i>	
IP: A theorist's view of the A-star laboratory	451
<i>H. Shibahashi</i>	
CP: Asteroseismology and helium gradients in A-type Stars	459
<i>S. Vauclair, S. Théado</i>	
Panel discussion I	465
<i>J.D. Landstreet</i>	

Section J. OBSERVATIONAL CHALLENGES OF A-TYPE STARS

Chair: G.A. Wade

IR: Observational challenges of A-type stars	473
<i>S. Bagnulo</i>	
IP: A-stars and the Virtual Observatory.....	485
<i>P. Padovani</i>	
Panel discussion J	495
<i>S. Bagnulo</i>	
SUMMARY OF THE SYMPOSIUM	499
<i>M.M. Dworetsky</i>	
List of Posters.....	505
Author index	511
Object index.....	515