

## Table of Contents

Preface .....	ix
The Organizing Committee .....	xi
Conference photographs .....	xii
Conference participants .....	xvi
Address by the SOC & LOC .....	xviii
<i>D. R. Soderblom and J. Valenti</i>	
Thoughts on IAU 258 (with apologies to Edgar Allan Poe) .....	xix
<i>F. M. Walter</i>	
Some problems in studying the ages of stars .....	1
<i>D. R. Soderblom</i>	

## Part 1. THE MILKY WAY AND NEARBY GALAXIES

*Chair: Guido De Marchi*

The star-formation history of the Milky Way Galaxy .....	11
<i>R. F. G. Wyse</i>	
The age of the Galaxy's thick disk .....	23
<i>S. Feltzing &amp; T. Bensby</i>	
Signatures of heating processes in the Galactic thin disk .....	31
<i>B. Nordström</i>	
The timescales of chemical enrichment in the Galaxy .....	39
<i>A. Pipino &amp; F. Matteucci</i>	
<i>Chair: Carla Cacciari</i>	
The star formation history of the Magellanic Clouds .....	51
<i>C. Gallart, I. Meschin, N. E. D. Noël, A. Aparicio, S. L. Hildago &amp; P. B. Stetson</i>	
Star formation histories of resolved galaxies .....	61
<i>M. Tosi</i>	
The ACS LCID project: Variable stars as tracers of population gradients .....	73
<i>E. J. Bernard, for the LCID team</i>	

## Part 2. AGES OF YOUNG STARS

*Chair: Michal Simon*

Age-related observations of low mass pre-main and young main sequence stars ..	81
<i>L. A. Hillenbrand</i>	
Age spreads in star forming regions? .....	95
<i>R. D. Jeffries</i>	

New methods for determining the ages of PMS stars . . . . .	103
<i>T. Naylor, N. J. Mayne, R. D. Jeffries, S. P. Littlefair &amp; E. S. Saunders</i>	
Circumstellar disk evolution: Constraining theories of planet formation . . . . .	111
<i>M. R. Meyer</i>	
<i>Chair: Andrea Dupree</i>	
Using ages and kinematic traceback: the origin of young local associations . . . . .	123
<i>D. Fernández, F. Figueras &amp; J. Torra</i>	
On the use of lithium to derive the ages of stars like our sun . . . . .	133
<i>S. Randich</i>	
Observational problems in determining the ages of open clusters . . . . .	141
<i>E. J. Jeffery</i>	
The Bologna Open Cluster Chemical Evolution project: a large, homogeneous sample of Galactic open clusters . . . . .	153
<i>A. Bragaglia</i>	

## Part 3. MODELS OF STARS AND TESTS OF MODELS

*Chair: Sylvie Vauclair*

Eclipsing binary stars as tests of stellar evolutionary models and stellar ages . . . . .	161
<i>K. G. Stassun, L. Hebb, M. López-Morales &amp; A. Prša</i>	
Globular cluster ages from main sequence fitting and detached, eclipsing binaries: The case of 47 Tuc . . . . .	171
<i>A. Dotter, J. Kaluzny &amp; I. B. Thompson</i>	
Models for Pop I stars: implications for age determinations . . . . .	177
<i>G. Meynet, P. Eggenberger, N. Mowlavi &amp; A. Maeder</i>	
A new method to estimate the ages of globular clusters: the case of NGC 3201 . . . . .	189
<i>A. Calamida, G. Bono, P. B. Stetson, M. Dall’Ora, M. Monelli, C.E. Corsi, P. G. Prada Moroni, S. Degl’Innocenti, A. Dotter, C. Brasseur, P. Amico, E. Marchetti, R. Buonanno, A. Di Cecco, S. D’Odorico, I. Ferraro, G. Iannicola, M. Nonino, M. Romaniello, N. Sanna, D. A. Vandenberg, M. Zoccali &amp; A. Walker</i>	
Homogeneous photometry of globular clusters — a progress report . . . . .	197
<i>P. B. Stetson</i>	
The ages of stars: The horizontal branch . . . . .	209
<i>M. Catalan</i>	

## Part 4. GLOBULAR CLUSTERS AND OLD OPEN CLUSTERS

*Chair: Rosemary Wyse*

Relative and absolute ages of Galactic globular clusters . . . . .	221
<i>A. Sarajedini</i>	

## Contents

vii

Observations of multiple populations in star clusters . . . . .	233
<i>G. Piotto</i>	
Recovering the ages and metallicities of stars of a complex stellar population system	245
<i>S. L. Hildago, A. Aparicio &amp; C. Gallart</i>	
Multiple population theory: The extreme helium population problem . . . . .	253
<i>S. K. Yi</i>	
The ages of Galactic globular clusters in the context of self-enrichment . . . . .	265
<i>T. Decressin, H. Baumgardt, P. Kroupa, G. Meynet &amp; C. Charbonnel</i>	
The star clusters of the Magellanic Clouds . . . . .	275
<i>A. D. Mackey</i>	

## Part 5. WHITE DWARFS

*Chair: Robert Rood*

White dwarf cosmochronology: Techniques and uncertainties . . . . .	287
<i>M. Salaris</i>	
White dwarfs as astrophysical probes . . . . .	299
<i>J. S. Kalirai</i>	
Stellar chronology with white dwarfs in wide binaries . . . . .	307
<i>S. Catalán, A. Garcés, I. Ribas, J. Isern &amp; E. García-Berro</i>	
Towards a precise white dwarf cooling age of a globular cluster . . . . .	315
<i>H. B. Richer, S. Davis, J. Kalirai, A. Dotter &amp; R. M. Rich</i>	

## Part 6. BROWN DWARFS

*Chair: Michael Liu*

Brown dwarfs as Galactic chronometers . . . . .	317
<i>A. J. Burgasser</i>	
Using magnetic activity and Galactic dynamics to constrain the ages of M dwarfs	327
<i>A. A. West, S. L. Hawley, J. J. Bochanski, K. R. Covey &amp; A. J. Burgasser</i>	
Confronting substellar theoretical models with stellar ages . . . . .	337
<i>T. J. Dupuy, M. C. Liu &amp; M. J. Ireland</i>	

## Part 7. AGE-RELATED PROPERTIES OF SOLAR-TYPE STARS

*Chair: Fred Walter*

Gyrochronology and its usage for main-sequence field star ages . . . . .	345
<i>S. A. Barnes</i>	
Stellar ages from stellar rotation . . . . .	357
<i>S. Meibom</i>	
The rotational evolution of low-mass stars . . . . .	363
<i>J. Irwin &amp; J. Bouvier</i>	

viii

*Contents*

How accurately can we age-date solar-type dwarfs using activity/rotation diagnostics? . . . . .	375
<i>E. E. Mamajek</i>	
Isochrones for late-type stars . . . . .	383
<i>P. Demarque</i>	
The Sun in time: age, rotation, and magnetic activity of the Sun and solar-type stars and effects on hosted planets . . . . .	395
<i>E. F. Guinan &amp; S. G. Engle</i>	
The promise of GAIA and how it will influence stellar ages. . . . .	409
<i>C. Cacciari</i>	

**Part 8. ASTEROSEISMOLOGY AND THE SUN***Chair: Jeff Valenti*

Stellar ages from asteroseismology . . . . .	419
<i>Y. Lebreton &amp; J. Montalbán</i>	
The Sun as a fundamental calibrator of stellar evolution . . . . .	431
<i>J. Christensen-Dalsgaard</i>	
Stellar ages from asteroseismology: a few examples . . . . .	443
<i>S. Vauclair</i>	

**Part 9. NUCLEOCHRONOLOGY***Chair: John Stauffer*

Stellar age dating with thorium, uranium and lead . . . . .	449
<i>A. Frebel &amp; K.-L. Kratz</i>	
Author index . . . . .	457
Object index . . . . .	459
Subject index . . . . .	462