# Table of Contents

Preface .......................................................... xvi
Organizing committees ........................................ xx
Conference photograph ....................................... xxi
Conference participants ....................................... xxix
Address by the Scientific Organizing Committee .......... xxxi

Mercedes T. Richards and Ivan Hubeny

## Opening Address
Shaking the Pot of Modeling Tools: Some Open Problems in the Field ........ 1

P. Harmanec

## 1. Multiwavelength Photometry and Spectroscopy of Interacting Binaries

Advances in Telescope and Detector Technology - Impacts on the Study and Understanding of Binary Star and Exoplanet Systems ............... 11

E. F. Guinan, S. Engle, and E. J. Devinney

Ground-Based and Space Observations of Interacting Binaries .......... 21

P. Niarchos

Techniques for Observing Binaries in Other Galaxies .................... 27

A. Z. Bonanos

The Impact of Gaia and LSST on Binaries and Exoplanets ................. 33

L. Eyer, P. Dubath, N. Mowlavi, P. North, A. Triaud, F. Barblan, C. Stroet, L. Guy, B. Tingley, S. Zucker, D. W. Evans, L. Wyrzykowski, M. Swegasus, and Z. Ivezic

The Impact of CoRoT and Kepler on Eclipsing Binary Science .......... 41

C. Maceroni, D. Gandolfi, J. Montalbán, and C. Aerts

Use of the Virtual Observatory Databases in Binary Star Research ...... 47

G. J. Peters

Multi-Technique Study of the X-Ray Binary Cyg X-1 .................... 53

E. A. Karitskaya

Light Curve and Orbital Period Analysis of the Eclipsing Binary AT Peg . 55

A. Liakos, P. Niarchos, and E. Budding

The Third Body in the Eclipsing Binary AV CMi: Hot Jupiter or Brown Dwarf? 57

A. Liakos, D. Mislis, and P. Niarchos
Table of Contents

Multiwavelength Photometry of the Young Intermediate Mass Eclipsing Binary TY CrA ................................................................. 59
M. Ammler-von Eiff, M. Vaňko, T. Pribulla, E. Covino, R. Neuhäuser, and V. Joergens

Eccentricity of Selected Eclipsing Systems .................................................. 61
W. Ogłoza, J. M. Kreiner, G. Stachowski, B. Zakrzewski, Z. Mikulášek, and M. Zejda

Reconstruction of an Accretion Disk Image in AU Mon from CoRoT Photometry 63
P. Mimica and K. Pavlovska

Multiwavelength Modeling the SED of Strongly Interacting Binaries ............. 65
A. Skopal

Spectroscopic Study of the Early-Type Binary HX Vel A ............................ 67
B. Özkardeş, D. Sürgit, A. Erdem, E. Budding, F. Soydugan and O. Demircan

Planets in Binary Systems ............................................................................ 69
A. Pilello

Northern Binaries in the Evrena Project ....................................................... 71
V. Bakš, H. Hensberge, M. Zejda, P. de Cat, F. Yılmaz, S. Bloemen,
P. Svoboda, and O. Demircan

Statistical Investigation of Physical and Geometrical Parameters in Close Binaries using the ASAS Database ........................................ 73
J. Nedoroščík, M. Vaňko, and Š. Parimucha

Some Developments of the Weak Stellar Magnetic Field Determination Method for the Example of Cygnus X-1 ................................. 75
N. G. Bochkarev and E. A. Karitskaya

KIC 4544587: An Eccentric, Short Period Binary with δ Scuti Pulsations and Tidally Excited Modes ......................................................... 77
K. Hambleton, D. Kurtz, A. Prša, S. Bloemen, and J. Southworth

Long-Term Variability and Outburst Activity of FS Aurigae: Further Evidence for a Third Body in the System ........................................ 79
V. Neustroev, G. Sjöberg, G. Tovmassian, S. Zharikov, T. Arranz Heras,
P. B. Lake, D. Lane, G. Lubke, and A. A. Henden

SPHOTOM – Package for an Automatic Multicolour Photometry .............. 81
Š. Parimucha, M. Vaňko, and P. Mikloš

The Photometric Study of Neglected Short-Period Eclipsing Binary BS Vulpeculae 83
M. Zejda, Z. Mikulášek, L. Zhu, S. Qian, and J. Liska

O-C Analysis of Selected 3-Body Systems .................................................. 85
W. Ogłoza, J. M. Kreiner, G. Stachowski, M. Winiarski, B. Zakrzewski,
S. Doğru, F. Aļiçāyus, O. Demircan, and A. Erdem

Hard X-ray and Optical Activity of Intermediate Polars .......................... 87
R. Gális, L. Hrvic, and E. Kandru
## Contents

| Title                                                                 | Page |
|----------------------------------------------------------------------|------|
| Is EQ Boo a Quadruple System?                                         | 89   |
| I. M. Volkov, D. Chochol, N. S. Volkova, and I. V. Nikolenko          |      |
| Long-Term Monitoring of Polars                                        | 91   |
| B. Kalomeni                                                           |      |
| The Apsidal Motion of the Eclipsing Binary Systems GSC 4487 0347 and | 93   |
| GSC 4513 2537                                                         |      |
| V. S. Kozyreva, A. V. Kusakin, T. Krajci, J. Menke, and T. M. Tsvetkova|      |
| Recent Spectral Observations of Epsilon Aurigae in the Near-IR        | 95   |
| L. Iliev                                                              |      |

### 2. Observations and Analysis of Exoplanets and Brown Dwarfs

Challenges to Observations of Low Mass Binaries                        | 99   |
| S. Kafka                                                              |      |
| Brown Dwarf Binaries                                                  | 105  |
| K. Allers                                                             |      |
| Detecting and Characterizing Exoplanets in Binary Star Systems        | 111  |
| M. Konacki                                                            |      |
| Probing Bow Shocks Around Exoplanets During Transits                  | 117  |
| A. A. Vidotto, M. Jardine, and C. Helling                            |      |
| The Impact of Red Noise in Radial Velocity Planet Searches           | 119  |
| R. V. Baluev                                                          |      |
| Pre-Cataclysmic System V471 Tau with Confirmed Brown Dwarf and Suspected Extrasolar Planet | 121  |
| L. Hric and E. Kundra                                                 |      |
| The Orbital Period Distribution of Cataclysmic Variables Found by the SDSS | 123  |
| J. Southworth, B. T. Gänsicke, and E. Breedt                         |      |
| Search for the Star-Planet Interaction                                | 125  |
| T. Krejčová, J. Budaj, and J. Koza                                   |      |
| An Extra-Solar Planet in a Double Stellar System: The Modelling of Insufficient Orbital Elements | 127  |
| E. Plávalová, N. A. Solovaya, and E. M. Pittich                      |      |
| Space-Based Photometry of Eclipsing Binaries                          | 129  |
| J. Southworth                                                         |      |
| Homogeneous Studies of Transiting Planets                             | 131  |
| J. Southworth                                                         |      |
| Light Curves of Planetary Transits: How About Ellipticity?           | 133  |
| C. von Essen, K. F. Huber, and J. H. M. M. Schmitt                   |      |
Contents

New Photometric Observations of the Transiting Extrasolar Planet TrES-3b . . . 135
  M. Vaňko, M. Jakubík, T. Krejčová, G. Maciejewski, J. Budaj, T. Pribulla,
  J. Ohlert, S. Raetz, V. Krushevska, and P. Dubovsky

Stellar Wobble Due to a Nearby Binary System ............................ 137
  M. H. M. Morris and A. C. M. Correia

Asymmetric Transit Curves as Indication of Orbital Obliquity: Clues from the
Brown Dwarf Companion in KOI-13. ................................. 139
  G. M. Szabó, R. Szabó, J. M. Benkő, H. Lehmann, G. Mező, A. E. Simon,
  Z. Kövári, G. Hodosán, Z. Regály, and L. L. Kiss

Multiband Transit Light Curve Modeling of WASP-4 ......................... 141
  N. Nikolov, J. Koppenhoefer, M. Lendl, T. Henning, and J. Greiner

New Binary and Exoplanet Candidates from STEREO Light Curves............ 143
  G. Whittaker, V. Sangaralingam, and I. Stevens

Panel Discussion I

Discussion I. ................................................................. 145
  F. Allard, A. Batten, E. Budding, E. Devinney, P. Eggleton, A. Hatzes,
  I. Hubeny, W. Kley, H. Lammer, A. Linnell, V. Trimble, and R. E. Wilson

3. Imaging Techniques

Binaries and Multiple Systems Observed with the CHARA, NPOI, SUSI and VLTI
Interferometric Eyes.......................................................... 155
  P. Stee

Observing Faint Companions Close to Bright Stars .......................... 163
  E. Serabyn

Tomography of Interacting Binary Systems: Algols to Gamma-Ray Binaries.... 167
  M. T. Richards

Polarimetry of Binary Stars and Exoplanets ................................ 173
  K. Bjorkman

Adaptive Optics Observations of Exoplanets, Brown Dwarfs, and Binary Stars . 181
  S. Hinkley

Mass Determination of Sub-stellar Companions Around Young Stars - The Exam-
ple of HR 7329 .................................................................. 189
  T. O. B. Schmidt, R. Neuhäuser, and A. Seifahrt

Lucky Imaging Survey for Binary Exoplanet Hosts .............................. 193
  C. Bergfors, W. Brandner, S. Daemgen, and T. Henning

Pipeline for Making Images of Gas Flows in Binary Stars ..................... 195
  M. T. Richards, E. Slobounov, M. Conover, J. Fisher, and A. Cocking
## Contents

| Section                                                                 | Page |
|------------------------------------------------------------------------|------|
| Differential Rotation in Two RS CVn Systems: σ Gem and ζ And.         | 197  |
| Z. Kővári, J. Bartus, L. Kriskovics, K. Olah, K. Vida, O. Ribárik, and K. G. Strassmeier |
| Modelling of an Eclipsing RS CVn Binary: V405 And.                    | 199  |
| K. Vida, K. Olah, and Z. Kővári                                       |
| Doppler Tomography in 2D and 3D of the X-ray Binary Cyg X-1 for June 2007 | 201  |
| O. I. Sharova, M. I. Agafonov, E. A. Karitskaya, N. G. Bochkarev,     |
| S. V. Zharikov, G. Z. Butenko, and A. V. Bondar                       |
| PTPS Candidate Exoplanet Host Star Radii Determination with CHARA Array | 203  |
| P. Zieliński, M. Vaňko, E. Baines, A. Niedzielski, and A. Wolszczan  |
| The MUNI Photometric Archive.                                          | 205  |
| M. Chrastina, M. Zejda, and Z. Mikulášek                               |
| Eclipsing Binaries Within Visual Ones: Prospects of Combined Solution | 207  |
| P. Zasche                                                             |
| Polarimetry of Exoplanetary System CoRoT-2                            | 209  |
| N. M. Kostygryz, T. M. Yakobchuk, and A. P. Vidmachenko                |

### 4. Model Atmospheres of Stars, Interacting Binaries, Disks, Exoplanets, and Brown Dwarfs

| Subsection                                                                 | Page |
|---------------------------------------------------------------------------|------|
| LTE Model Atmospheres: MARCS, ATLAS and CO5BOLD.                          | 213  |
| P. Bonifacio, E. Caffau, H.-G. Ludwig, and M. Steffen                     |
| Basic Tools for Modeling Stellar and Planetary Atmospheres               | 221  |
| I. Hubeny                                                                 |
| Hot Stars with Winds: The CMFGEN Code.                                    | 229  |
| D. J. Hillier                                                            |
| Stellar to Substellar Model Atmospheres.                                 | 235  |
| F. Allard, D. Homeier, and B. Freytag                                    |
| Comparison of Limb-Darkening Laws from Plane-Parallel and Spherical Model Stellar Atmospheres | 243  |
| H. R. Neilson                                                            |
| Modeling of Circumstellar Dust by the DUSTY Code.                        | 247  |
| T. Jurkić and D. Kotnik-Karuza                                            |
| Modeling Supernova Spectra.                                              | 251  |
| D. J. Hillier, L. Dessart, and C. Li                                      |
| Polarized Radiative Transfer Equation in Some Geometries of Elliptic Type | 253  |
| J. Freimanis                                                             |
| Influence of Rotation Velocity Gradient on Line Profiles of Accretion Discs of CVs | 255  |
| D. Korčáková, T. Nagel, K. Werner, V. Suleimanov, and V. Votruba          |
Contents

Hydrodynamics of Decretion Disks of Rapidly Rotating Stars .................. 257
P. Kurfürst

Multi-dimensional Modeling of Massive Binary Interaction in Eta Carinae ...... 259
J. H. Groh

Modeling of the Be Stars ................................................................. 261
K. Šejnová, V. Votruba, and P. Koubský

Fitting of Silicon lines in UV and Balmer H· Line in Optical Spectra of B supergiant HD 198478 ................................................................. 263
T. Jurkić, M. Sarta Deković, and D. Kotnik-Karuza

Creation of Neutral Disk-like Zone around the Active Hot Star in Symbiotic Binaries ................................................................. 265
Z. Cariková and A. Skopal

New Galactic Candidate Luminous Blue Variables and Wolf-Rayet Stars ...... 267
G. S. Stringfellow, V. V. Gvaramadze, Y. Beletsky, and A. Y. Kniazev

5. Synthetic Light Curves and Velocity Curves, Synthetic Spectra of Binary Stars and their Accretion Structures

Advances in Modeling Eclipsing Binary Stars in the Era of Large All-Sky Surveys with EBAI and PHOEBE ...................................................... 271
A. Prša

ROCHE: Analysis of Eclipsing Binary Multi-Dataset Observables .................. 279
T. Pribulla

The BINSYN Program Suite ................................................................. 283
A. P. Linnell

Application of the GDDSYN Method in the Era of KEPLER, CoRoT, MOST and BRITE ................................................................. 287
S. W. Mochnacki

Synthetic Spectra and Light Curves of Interacting Binaries and Exoplanets with Circumstellar Material: SHELLSPEC .............................................. 293
J. Budaj

Search for Tidally Driven Anomalies in the Atmospheres of Am Stars ........ 299
I. Stateva, I. Iliev, and J. Budaj

RaveSpan - Radial Velocity and Spectrum Analyzer .................................. 301
B. Pilecki, P. Konorski, and M. Gorski

Chemical History of Algol and its Components ........................................ 303
V. Kolbas, K. Pvelovski, J. Southworth, C.-U. Lee, J. W. Lee, S.-L. Kim, and H.-I. Kim

Infinity – A New Program for Modeling Binary Systems ............................ 305
C. Attila and O. Latković
# Table of Contents

| Title                                                                 | Page |
|----------------------------------------------------------------------|------|
| Fundamental Parameters of Four Massive Eclipsing Binaries in Westerlund 1... | 307  |
| E. Koumpia and A. Z. Bonanos                                          |      |
| Is the B[e] Star V2028 Cyg a Binary?                                  | 309  |
| J. Polster, D. Korčáková, V. Votruba, P. Škoda, M. Šlechta and B. Kučerová |      |
| Peculiarities in the Spectrum of the Early-type System MY Ser          | 311  |
| P. Mayer, H. Drechsel, and M. Brož                                   |      |
| Period Changes of the Algol System SZ Herculis                        | 313  |
| J. W. Lee, C.-U. Lee, S.-L. Kim, H.-I. Kim, J.-H. Park, and T. C. Hminse |      |
| The Role of Electron Scattering in Probing the Wind from the Hot Star in Symbiotic Binaries | 315  |
| M. Sekerdě and A. Skopal                                              |      |
| Optical Spectroscopy of V393 Scorpii During its Long Cycle.           | 317  |
| R. E. Meninckent, Z. Kołaczkowski, G. Djurasovic, D. M. Díaz, and E. Niemczura |      |
| Methods of the Long-term Radial-Velocity Variation Removal and their Application to Detect Duplicity of Several Be Stars | 319  |
| J. Nemravová, P. Harmannec, P. Koubíček, and A. Miroshnichenko         |      |
| Advanced Tools for Exploring Large EB Datasets                        | 321  |
| E. J. Devinney, A. Prša, E. F. Guinan, and M. Degeorge                |      |
| Applying the Steepest Descent Method with BINSYN on RY Per Photometry | 323  |
| D. Sudar, H. Božič, and D. Ruždjak                                    |      |
| The Effects of Eccentric Accretion Structures on the Light Curves of Interacting Algol-type Binary Stars | 325  |
| P. A. Reed                                                            |      |
| Physical Parameters of the Detached Eclipsing Binary KIC3858884 with a δ-Scti Type Pulsating Component | 327  |
| C.-U. Lee, S.-L. Kim, J. W. Lee, K. Pavlovski, and J. Southworth       |      |
| New Light Curve Analysis for Large Numbers of Eclipsing Binaries III. SMC and Galactic Center. | 329  |
| Y.-W. Kang, K. S. Hong, and P. Rittipruk                              |      |
| Mass and Orbit Constraints of the Gamma-ray Binary LS 5039.           | 331  |
| T. Szalai, G. E. Sarty, L. L. Kiss, J. M. Matthews, J. Vinkó, and C. Kiss |      |
| Spectroscopic Binaries Among λ Bootis-type Stars.                     | 333  |
| E. Paunzen, L. Fraga, U. Heiter, I. Riev, I. Kamp, and O. Pintado      |      |
| Characterizing New Eclipsing Binaries Identified from STEREO Photometry | 335  |
| H. Markov, Z. Tsvetanov, I. Riev, I. Stateva, and N. Markova           |      |
| Modelling Light Curves of Systems with Non-Circular Accretion Disks: KU Cyg | 337  |
| S. Zola and T. Szymanski                                              |      |
| Towards an Increased Accuracy of Fundamental Properties of Stars: Proposing a Set of Nominal Astrophysical Parameters and Constants. | 339  |
| A. Prša and P. Harmannec                                              |      |
Panel Discussion II

Discussion II

F. Allard, A. Batten, E. Budding, E. Devinney, P. Eggleton, A. Hatzes, I. Hubeny, W. Kley, H. Lammer, A. Linnell, V. Trimble, and R. E. Wilson

6. Analysis of Spectra and Light Curves

The Disentangling of Stellar Spectra

P. Hadrava

Quantitative Spectroscopy of Close Binary Stars

K. Pavlovski and J. Southworth

The Broadening Functions Technique

S. M. Rucinski

TODCOR - Two Dimensional Correlation

S. Zucker

The Long History of the Rossiter-McLaughlin Effect and its Recent Applications

S. Albrecht

The Rossiter McLaughlin Effect for Planets and Low Mass Binaries

A. H. M. J. Triaud

Period Analyses Without O-C Diagrams

Z. Mikulás, M. Zejda, and J. Janík

Renormalization of KOREL-Decomposed SB2 Spectra

H. Lehmann and A. Tkachenko

The BANANA Survey: Spin-Orbit Alignment in Binary Stars

S. Albrecht, J. N. Winn, D. C. Fabrycky, G. Torres, and J. Setiawan

A Search for the Secondary Spectrum of ϵ Aurigae

P. D. Bennett, P. Harmanec, P. Chadima, and S. Yang

An Unexpected Outcome from Disentangling

P. Chadima, P. Harmanec, P. D. Bennett, and S. Yang

VO-KOREL: A Fourier Disentangling Service of the Virtual Observatory

P. Škoda, P. Hadrava, and J. Fuchs

Constrained Genetic Disentangling of Close Binary Spectra

V. Kolbas and K. Pavlovski

7. Formation and Evolution of Binary Stars, Brown Dwarfs, and Planets

Binary Star Formation Simulations

C. J. Clarke

Non-conservative Evolution of Binaries

C. A. Tout
# Table of Contents

| Page | Title |
|------|-------|
| 425  | Direct Imaging of Bridged Twin Protoplanetary Disks in a Young Multiple Star  |
| S. Mayama, M. Tamura, T. Hanawa, T. Matsumoto, M. Ishii, T.-S. Pyo, H. Suto, T. Naoi, T. Kudo, J. Hashimoto, S. Nishiyama, M. Kuzuhara, and M. Hayashi |
| 429  | Formation and Orbital Evolution of Planets |
| W. Kley |
| 437  | Towards a Theory for the Atmospheres, Structure, and Evolution of Giant Exoplanets |
| A. Burrows |
| 444  | Eclipse Timing Variations of Planets in P-Type Binary Star Systems |
| R. Schwarz, N. Haghighipour, B. Funk, S. Eggl, and E. Pilat-Lohinger |
| 446  | New Insights into the Dynamics of Planets in P-Type Motion Around Binaries |
| B. Funk, S. Eggl, M. Gyergyovits, R. Schwarz, and E. Pilat-Lohinger |
| 448  | Dependence of Circumsubstellar Disk SEDs on System Inclination |
| O. Zakhozhay |
| --   | Planetary Dynamics in the α Centauri System: Lyapunov Spectra and Long-term Behaviour |
| E. A. Popova and I. I. Shovenko |
| 452  | T Tauri Binaries in Orion: Evidence for Accelerated and Synchronized Disk Evolution |
| S. Daemgen, M.G. Petr-Gotzens, and S. Correia |
| 454  | Variability of Young Massive Stars in the Arches Cluster |
| K. Markakis, A. Z. Bonanos, G. Pietrzynski, L. Macri, and K. Z. Stanek |
| 456  | The Evolution of Low Mass Contact Binaries |
| K. Stepien and K. Gazews |
| 458  | Kinematic Properties of Chromospheric Active Binary Stars |
| M. Tijszü, F. Soydugan, S. Bilir, and O. Demircan |
| 460  | The AstraLux Binary M Dwarfs Survey |
| C. Bergfors, W. Brandner, S. Hippler, T. Henning, M. Janson, and F. Hormuth |
| 462  | Binary Systems Within Star Clusters |
| E. Paunzen, C. Stütz, and B. Baumann |
| 464  | Age Dependent Angular Momentum, Orbital Period and Total Mass of Detached Binaries |
| O. Demircan, M. Tijszü, F. Soydugan, and S. Bilir |
| 466  | Li and Be Depletion in Stars with Exoplanets |
| E. Delgado Mena, G. Israeli, J. I. González Hernández, R. Rebolo, N. C. Santos, S. G. Sousa, and J. Fernandes |
## Contents

| Title                                                                 | Pages |
|----------------------------------------------------------------------|-------|
| Binary Systems As Gravitational Wave Sources                          | 468   |
| O. Köse and K. Yakut                                                  |       |
| Photoionization Models of the Eskimo Nebula: Evidence for a Binary Central Star? | 470   |
| A. Danehkar, D. J. Frew, Q. A. Parker, and O. De Marco                |       |
| The Keck I/HIRES and TNG/SARG Radial Velocity Survey of Speckle Binaries | 472   |
| M. Ratajczak, M. Konacki, S. R. Kulkarni, and M. W. Muterspaugh      |       |
| New Approach for Solution of the Planet Transit Problem              | 474   |
| D. P. Kjurkchieva and D. P. Dimitrov                                  |       |
| The Origin and Evolution of the Black Hole Binary XTE J1118+480       | 476   |
| J. I. González Hernández, R. Rebolo, and J. Cásares                  |       |
| Magnetic Activity of Two Similar Subgiants in Binaries with Very Different Mass Ratios: El Eri and V711 Tau. | 478   |
| K. Oláh, Z. Kövári, K. Vida, and K. G. Strassmeier                   |       |
| Searching for the Signatures of Terrestrial Planets in “Hot” Analogs | 480   |
| J. I. González Hernández, E. Delgado Mena, G. Israeli, S. G. Sousa,  |       |
| N. C. Santos, and S. Udry                                            |       |
| Calibrating Ultracool Atmospheres with Benchmark Companions from WISE+2MASS | 482   |
| J. I. Gomes, D. Pinfield, A. Day-Jones, H. Jones, B. Burningham,     |       |
| F. Marocco, Z. Zhang, and L. van Spaandonk                            |       |
| First Catalogue of Optically Variable Sources Observed by OMC Onboard INTEGRAL | 484   |
| J. Alfonso-Garzón, A. Domingo, and J. Miguel Mas-Hesse               |       |
| Day-Night Side Cooling of a Strongly Irradiated Giant Planet         | 486   |
| J. Budaj, A. Burrows, and I. Hubeny                                  |       |
| NSVS 01031772 Cam: A New Low-Mass Triple?                             | 490   |
| M. Wolf, P. Zasche, K. Hronoch, M. Chrustina, J. Janik, and M. Žejda |       |
| CCD Photometric Study of the Puzzling W UMa-type Binary TZ Boo        | 492   |
| P.-E. Christopoulou, A. Papageorgiou, and I. Chrysopoulos            |       |
| Structure Coefficients for Use in Stellar Analysis                   | 494   |
| G. Inlek and E. Budding                                              |       |
| Surface Brightness Variation of the Contact Binary SW Lac: Clues From Doppler Imaging | 496   |
| H. V. Şenavci                                                        |       |
| An Unusual Low State of the Polar AR UMa                              | 498   |
| D. P. Kjurkchieva and D. V. Marchev                                 |       |

## Panel Discussion III

| Title                                                                 | Pages |
|----------------------------------------------------------------------|-------|
| Discussion III                                                       | 501   |
| F. Allard, A. Batten, E. Budding, E. Devinney, P. Eggleton, A. Hatzes, |       |
| I. Hubeny, W. Kley, H. Lammer, A. Linnell, V. Trimble, and R. E. Wilson |       |
## Contents

8. Hydrodynamic Simulations of Exoplanets and Mass Transfer in Interacting Binaries

Flow Structure in Magnetic CVs ............................... 509  
*D. V. Bisikalo and A. G. Zhilkin*

How Common Envelope Interactions Change the Lives of Stars and Planets 517  
*O. De Marco, J.-C. Passy, F. Herwig, C. L. Fryer, M.-M. Mac Low, and J. S. Oishi*

Hydrodynamics of Young Binaries with Low-Mass Secondaries .......... 521  
*T. Demidova, V. Grinin, and N. Sotnikova*

Exoplanet Upper Atmosphere Environment Characterization ............... 525  
*H. Lammer, K. G. Kislyakova, P. Odert, M. Leitzinger, M. L. Khodachenko, M. Holmström, and A. Hanslmeier*

3D Models of Exoplanet Atmospheres ................................ 533  
*I. Dobbs-Dixon*

Dynamical Stability and Habitability of Extra-solar Planets ............... 539  
*E. Pilat-Lohinger*

Gas Dynamic Simulation of the Star-Planet Interaction using a Binary Star Model 545  
*D. E. Ionov, D. V. Bisikalo, P. V. Kaygorodov, and V. I. Shematovich*

Gas Dynamic Simulations of Inner Regions of Protoplanetary Disks in Young Binary Stars ........................................ 547  
*A. M. Fateeva, D. V. Bisikalo, P. V. Kaygorodov, and A. Yu. Sytov*

Modeling Fluid Flow Effects in Close Binary and Protoplanetary Systems ...... 549  
*M. M. Montgomery*

Panel Discussion IV ........................................................................... 551  
*F. Allard, A. Batten, E. Budding, E. Devinney, P. Eggleton, A. Hatzes, I. Hubeny, W. Kley, H. Lammer, A. Linnell, V. Trimble, and R. E. Wilson*

Summary

Summary of Observational Techniques ........................................ 557  
*P. Koubský*

Summary of Theoretical Techniques ........................................... 562  
*A. Burrows*

Closing Remarks .............................................................................. 564  
*M. Richards*

Author Index .................................................................................. 565