CONTENTS

Editor's Recommendation
Utilization of an H-reversal trajectory of a solar sail for asteroid deflection
Sheng-Ping Gong, Jun-Feng Li and Xiang-Yuan Zeng .................... 1123

Letters
The supernova remnant CTB 37B and its associated magnetar CXOU J171405.7–381031:
evidence for a magnetar-driven remnant
J. E. Horvath and M. P. Allen .................................................. 625
Origin of power-law X-ray emission in the steep power-law state of X-ray binaries
Li-Hong Yan and Jian-Cheng Wang ........................................... 631
The optical/ultraviolet excess of isolated neutron stars in the resonant cyclotron scattering
model
Hao Tong, Ren-Xin Xu and Li-Ming Song .................................... 1371

Invited Reviews
Past, present and future of the Resonant-Mass gravitational wave detectors
Odylio Denys Aguiar ................................................................. 1
The astrophysical gravitational wave stochastic background
Tania Regimbau ................................................................. 369
Recent progress of solar physics research in China
Cheng Fang ................................................................. 1377

Research Papers
A possible precession period for superluminal ejection in QSO 3C 279
Shan-Jie Qian ................................................................. 43
$^{10}$–$^{11}$ H$_2$CO and H$_{110}$ observations towards the giant HII region in cloud complex W43
Gang Wu, Jarken Esimbek, Jian-Jun Zhou and Xiao-Hong Han .............. 63
Nonlinear time series analysis of the light curves from the black hole system GRS1915+105
K. P. Harikrishnan, Ranjeev Misra and G. Ambika ........................................ 71
Steady state equilibrium condition of npe$^\pm$ gas and its application to astrophysics
Men-Quan Liu ................................................................. 91
On some applications of invariant manifolds
Xi-Yun Hou, Lin Liu and Yu-Hui Zhao ................................... 103
Development of the super high angular resolution principle for X-ray imaging
Chen Zhang and Shuang-Nan Zhang ........................................ 119
Constraints on smoothness parameter and dark energy using observational H(z) data
Hao-Ran Yu, Tian Lan, Hao-Yi Wan, Tong-Jie Zhang and Bao-Quan Wang .......... 125
Multiwavelength study of low-luminosity 6.7-GHz methanol masers
Yuan-Wei Wu, Ye Xu and Ji Yang ........................................... 137
H$_2$CO and H110a survey toward UCHII regions
Xiao-Hong Han, Jian-Jun Zhou, Jarken Esimbek, Gang Wu and Ming-Fei Gao ....... 156
A possible origin of viscosity in Keplerian accretion disks due to secondary perturbation:
Turbulent transport without magnetic fields
Banibrata Mukhopadhyay and Kanak Saha .................................. 163
Photometric study of eclipsing binaries in the Large Magellanic Cloud — I. W UMa type
binaries in the Large Magellanic Cloud
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>XMM-Newton observation of the eclipsing binary Algol</td>
<td>457</td>
</tr>
<tr>
<td>Xue-Juan Yang, Fang-Jun Lu, Bernd Aschenbach and Li Chen</td>
<td></td>
</tr>
<tr>
<td>Maximum mass of a hot neutron star with a quark core</td>
<td>471</td>
</tr>
<tr>
<td>Tayebeh Yazdizadeh and Gholam Hossein Bordbar</td>
<td></td>
</tr>
<tr>
<td>Strange star candidates revised within a quark model with chiral mass scaling</td>
<td>482</td>
</tr>
<tr>
<td>Ang Li, Guang-Xiong Peng and Ju-Fu Lu</td>
<td></td>
</tr>
<tr>
<td>Neural network prediction of solar cycle 24</td>
<td></td>
</tr>
<tr>
<td>A. Ajabshirizadeh, N. Masoumzadeh Jouzdani and Shahram Abbasi</td>
<td>491</td>
</tr>
<tr>
<td>Cosmological constraints on the DGP braneworld model with gamma-ray bursts</td>
<td></td>
</tr>
<tr>
<td>Nan Liang and Zong-Hong Zhu</td>
<td>497</td>
</tr>
<tr>
<td>Comparison of halo detection from noisy weak lensing convergence maps with Gaussian smoothing and MRLens treatment</td>
<td>507</td>
</tr>
<tr>
<td>Yang-Xiu Jiao, Huan-Yuan Shan and Zu-Hui Fan</td>
<td></td>
</tr>
<tr>
<td>Detailed study of B037 based on HST images</td>
<td>524</td>
</tr>
<tr>
<td>Submillimeter/millimeter observations of the molecular clouds associated with Tycho's supernova remnant</td>
<td>537</td>
</tr>
<tr>
<td>Jin-Long Xu, Jun-Jie Wang and Martin Miller</td>
<td></td>
</tr>
<tr>
<td>Shock fragmentation model for gravitational collapse</td>
<td>545</td>
</tr>
<tr>
<td>Michael Wilkinson, Bernhard Mehlig and Michael A. Morgan</td>
<td></td>
</tr>
<tr>
<td>Metallicity calibration for solar type stars based on red spectra</td>
<td>563</td>
</tr>
<tr>
<td>Jing-Kun Zhao, Gang Zhao, Yu-Qin Chen and A-Li Luo</td>
<td></td>
</tr>
<tr>
<td>Search for pulsations in the LMXB EXO 0748–676</td>
<td>577</td>
</tr>
<tr>
<td>Chetana Jain and Biswajit Paul</td>
<td></td>
</tr>
<tr>
<td>Absolute parameters and physical nature of two W-UMa type binaries: V1123 Tau and V1128 Tau</td>
<td>583</td>
</tr>
<tr>
<td>Xiao-Bin Zhang, An-Bin Ren, Chang-Qing Luo and Yang-Ping Luo</td>
<td></td>
</tr>
<tr>
<td>A time series of filament eruptions observed by three eyes from space: from failed to successful eruptions</td>
<td>594</td>
</tr>
<tr>
<td>Yuan-Deng Shen, Yu Liu and Rui Liu</td>
<td></td>
</tr>
<tr>
<td>Possible radio precursors/signatures of the CMEs onset: radio type III bursts and fine structures in the centimeter-metric wavelength region</td>
<td>607</td>
</tr>
<tr>
<td>Min Wang, Guan-Nan Gao, Rui-Xiang Xie and Cheng-Ming Tan</td>
<td></td>
</tr>
<tr>
<td>Instability of the cometary plasma tail — the instability in a plasma sheet</td>
<td>617</td>
</tr>
<tr>
<td>Lin-Zhong Liu, Yue-Hua Ma and Jian-Chun Shi</td>
<td></td>
</tr>
<tr>
<td>Comment on “Constraining the smoothness parameter and dark energy using observational H(z) data”</td>
<td>637</td>
</tr>
<tr>
<td>V. C. Busti and R. C. Santos</td>
<td></td>
</tr>
<tr>
<td>Dark energy constraints from joint analysis of standard rulers and standard candles</td>
<td>641</td>
</tr>
<tr>
<td>Marek Biesiada, Beata Malec and Aleksandra Piorkowska</td>
<td></td>
</tr>
<tr>
<td>On the fairness of the main galaxy sample of SDSS</td>
<td>655</td>
</tr>
<tr>
<td>Ke-Lai Meng, Bin Ma, Jun Pan and Long-Long Feng</td>
<td></td>
</tr>
<tr>
<td>C2H, HC3N and HNC observations in OMC–2/3</td>
<td>671</td>
</tr>
<tr>
<td>Qiang Liu, Ji Yang, Yan Sun and Ye Xu</td>
<td></td>
</tr>
<tr>
<td>First-order phase transitions in rotating hybrid stars and pulsar glitches</td>
<td>679</td>
</tr>
<tr>
<td>Fei Xiao, Chun-Mei Pi, Shu-Hua Yang, Ai-Zhi Zhou and Xiao-Ping Zheng</td>
<td></td>
</tr>
<tr>
<td>A note on the discovery of a 2M⊙ pulsar</td>
<td>687</td>
</tr>
<tr>
<td>Xiao-Yu Lai and Ren-Xin Xu</td>
<td></td>
</tr>
<tr>
<td>Magnetic field changes associated with three successive M-class solar flares on 2002 July 26</td>
<td>692</td>
</tr>
<tr>
<td>Pu Wang, Ming-De Ding, Hai-Sheng Ji and Hai-Min Wang</td>
<td></td>
</tr>
</tbody>
</table>
Detailed analysis of fan-shaped jets in three dimensional numerical simulation

Rong-Lin Jiang, K. Shibata, H. Isobe and Cheng Fang ........................................ 701

Panel positioning error and support mechanism for a 30-m THz radio telescope

De-Hua Yang, Daniel Okoh, Guo-Hua Zhou, Ai-Hua Li, Guo-Ping Li and Jing-Quan Cheng ........................................ 725

Time series data correction for the Chang’E-1 gamma-ray spectrometer

Li-Yan Zhang, Yong-Liao Zou, Jian-Zhong Liu, Jian-Jun Liu, Ji Shen, Ling-Li Mu, Xin Ren,
Wei-Bin Wen and Chun-Lai Li .................................................. 737

Observational constraints on the early dark energy model

Lei Feng and Yu-Peng Yang .................................................... 751

Dark energy from logarithmically modified gravity and deformed Coleman-Weinberg potential

Ahmad Rami El-Nabulsi ....................................................... 759

Robertson-Walker cosmological models with perfect fluid in general relativity

Rishi Kumar Tiwari ............................................................... 767

Combining optical and X-ray observations of galaxy clusters to constrain cosmological parameters

Heng Yu and Zong-Hong Zhu .................................................. 776

$^{12}$CO, $^{13}$CO and C$^{18}$O observations along the major axes of nearby bright infrared galaxies

Qing-Hua Tan, Yu Gao, Zhi-Yu Zhang and Xiao-Yang Xia ........................................ 787

Dark halos acting as chaos controllers in asymmetric triaxial galaxy models

Nicolaos D. Caranicolas and Evaggelos E. Zotos ................................. 811

Possible distance indicators in gamma-ray pulsars

Wei Wang ................................................................. 824

Spectroscopic and photometric observations of unidentified ultraviolet variable objects in the GUVV-2 Catalog

You Li, Jing Wang, Jian-Yan Wei and Xiang-Tao He ........................................ 833

Photometric study and preliminary elements of the low-mass ratio W UMa system ASAS 021209+2708.3

Francesco Acerbi, Carlo Barani and Massimiliano Martignoni ........................................ 843

Computation of the structure of a magnetized strange quark star

Gholam Hossein Bordbar and Ali Reza Peivand ........................................ 851

New applications of the H-reversal trajectory using solar sails

Xiang-Yuan Zeng, Hexi Baoyin, Jun-Feng Li and Sheng-Ping Gong ........................................ 863

BL Lacertae objects and the extragalactic $\gamma$-ray background

Fan Li and Xin-Wu Cao .......................................................... 879

Dark energy in five-dimensional Brans-Dicke cosmology with dimensional reduction

Ahmad Rami El-Nabulsi ....................................................... 888

Testing the distance-duality relation with data from galaxy clusters and type Ia supernovae

Xiang-Yan Fu, Pu-Xun Wu, Hong-Wei Yu and Zheng-Xiang Li ........................................ 895

External photon fields in Fermi bright blazars

Xiao-Yan Gao, Jian-Cheng Wang and Ming Zhou ........................................ 902

Stellar kinematics and populations out to 1.5 effective radii in the elliptical galaxy NGC 4636

Shi-Bi Pu and Zhan-Wen Han .................................................. 909

Automatic determination of stellar atmospheric parameters and construction of stellar spectral templates of the Guoshoujing Telescope (LAMOST)

Yue Wu, A-Li Luo, Hai-Ning Li, Jian-Rong Shi, Philippe Prugniel, Yan-Chun Liang,
Yong-Heng Zhao, Jian-Nan Zhang, Zhong-Rui Bai, Peng Wei, Wei-Xiang Dong,
Hao-Tong Zhang and Jian-Jun Chen ........................................ 924

Photometric observations of three high mass X-ray binaries and a search for variations induced by orbital motion

Gordon E. Sarty, Bogumil Pilecki, Daniel E. Reichart, Kevin M. Ivarsen,
Joshua B. Haislip, Melissa C. Nysewander, Aaron P. LaCluyze, Helen M. Johnston, Robert R. Shobbrook, László L. Kiss and Kinwah Wu .............................. 947
Binary population synthesis study of the supersoft X-ray phase of single degenerate type Ia supernova progenitors

Xiang-Cun Meng and Wu-Ming Yang .................................................. 965
Strong pulses from pulsar PSR J0034−0721
Adili Tuoheti, Ali Esamdin, Hui-Dong Hu, Guo-Liang Lù, Na Wang and Mamat Abliz 974
Solar sail time-optimal interplanetary transfer trajectory design

Sheng-Ping Gong, Yun-Feng Gao and Jun-Feng Li ................................ 981
Stochastic parallel gradient descent based adaptive optics used for a high contrast imaging coronagraph

Bing Dong, De-Qing Ren and Xi Zhang .............................................. 997
The effects of BCGs on the statistics of large-separation lensed quasars by clusters
Hong Qi and Da-Ming Chen .............................................................. 1003
Latest cosmological constraints on Cardassian expansion models including the updated gamma-ray bursts

Nan Liang, Pu-Xun Wu and Zong-Hong Zhu ...................................... 1019
Fractal dimension and thermodynamic fluctuation properties of IDV light curves

Chun-Sing Leung, Jian-Yan Wei, A. K. H. Kong, Zoltan Kovács and Tiberiu Harko 1031
Multiband fitting to three long GRBs with Fermi/LAT data: structured ejecta sweeping up a density-jump medium

Si-Yi Feng and Zi-Gao Dai ................................................................. 1046
Photometric analysis of V30 of open cluster NGC 7789
Yellapragada Ravi Kiron, Kandulapati Sriram and Pasagada Vivekananda Rao .... 1067
Systematic differences in position and proper-motion between the PPMX and UCAC3 catalogs

Jia-Cheng Liu, Zi Zhu and Bo Hu ...................................................... 1074
Pulsating magneto-dipole radiation of a quaking neutron star powered by energy of Alfvén seismic vibrations

Sergey Bastrukov, Jun-Wei Yu, Ren-Xin Xu and Irina Molodtsova .............. 1085
Kinematics and stellar population properties of the Andromeda galaxy by using the spectroscopic observations of the Guoshoujing Telescope

Hu Zou, Yan-Bin Yang, Tian-Meng Zhang, Jun Ma, Xu Zhou, Ali Luo,
Hao-Tong Zhang, Zhong-Rui Bai and Yong-Heng Zhao ........................... 1093
An experimental indoor phasing system based on active optics using dispersed Hartmann sensing technology in the visible waveband

Yong Zhang, Gen-Rong Liu, Yue-Fei Wang, Ye-Ping Li, Ya-Jun Zhang, Liang Zhang,
Yi-Zhong Zeng and Jie Zhang .......................................................... 1111
Pulse profile stability of the Crab pulsar
Chetana Jain and Biswajit Paul .......................................................... 1134
Characteristics of convection and overshooting in RGB and AGB stars

Xiang-Jun Lai and Yan Li ................................................................. 1143
A multicolor photometric study of the neglected eclipsing binary FT Ursae Majoris

Jin-Zhao Yuan ............................................................................... 1158
Discovery of a variable broad absorption line in the BL Lac object PKS B0138−097
Shao-Hua Zhang, Hui-Yuan Wang, Hong-Yan Zhou, Ting-Gui Wang and Peng Jiang 1163
Serendipitous discovery of warm absorbers in the Seyfert 2 galaxy IRAS 18325−5926
Shui-Nai Zhang, Qiu-Sheng Gu, Li Ji and Zhi-Xin Peng ........................... 1171
Lensing clusters of galaxies in the SDSS-III
Zhong-Lue Wen, Jin-Lin Han and Yun-Ying Jiang .................................. 1185
Testing the distance-duality relation with a combination of cosmological distance observations
Shuo Cao and Nan Liang ................................. 1199
Observing the reconnection region in a transequatorial loop system
Rui Liu, Tong-Jiang Wang, Jeongwoo Lee, Guillermo Stenborg, Chang Liu,
Sung-Hong Park and Hai-Min Wang .......................... 1209
Observations of EUV and soft X-ray recurring jets in an active region
Li-Heng Yang, Yun-Chun Jiang, Jia-Yan Yang, Yi Bi, Rui-Sheng Zheng and
Jun-Chao Hong .............................................. 1229
Mutual eclipses of J2 Europa by J1 Io observed at Yunnan Observatory in 2009
Xi-Liang Zhang and Zhong Liu .................................. 1243
Accelerated Dilatonic-Brans-Dicke cyclic and non-singular universe from string theory
Ahmad Rami El-Nabulsi ........................................ 1249
Lookback time as a test for $f(R)$ gravity in the Palatini approach
Zhong-Xu Zhai and Wen-Biao Liu ................................ 1257
Accretion and jet power in active galactic nuclei
Luigi Foschini ................................................ 1266
A computational method to help identify and measure metal lines in high resolution QSO spectra
Xi-Heng Shi, David Tytler, Jin-Liang Hou, David Kirkman, Jeffery Lee and
Benjamin Ou .................................................. 1279
Spectroscopic study of globular clusters in the halo of M31 with the Xinglong 2.16m telescope
Zhou Fan, Ya-Fang Huang, Jin-Zeng Li, Xu Zhou, Jun Ma, Hong Wu,
Tian-Meng Zhang and Yong-Heng Zhao .......................... 1298
Rapid variability in S5 0716+714
Jun-Hui Fan, Jun Tao, Bo-Chen Qian, Yi Liu, Jiang-He Yang, Fei-Peng Pi and
Wei Xu ........................................................ 1311
The physical origin of optical flares following GRB 110205A and the nature of the outflow
Wei-Hong Gao .................................................. 1317
The frequencies of high frequency quasi-periodic oscillations in two different frames in black hole LMXBs
Chang-Sheng Shi ................................................. 1327
Modeling blue stragglers in young clusters
Pin Lu, Li-Cai Deng and Xiao-Bin Zhang .......................... 1336
Chemical mixing by turbulent convection in the overshooting region below the convective envelope of RGB stars
Xiang-Jun Lai and Yan Li ........................................ 1351
The effects of parametrization of the dark energy equation of state
Ke Shi, Yong-Feng Huang and Tan Lu ............................. 1403
The relationship between the radio core dominance parameter and the spectral index in different classes of extragalactic radio sources
Jun-Hui Fan, Jiang-He Yang, Jing Pan and Tong-Xu Hua .......................... 1413
Modeling the Newtonian dynamics for rotation curve analysis of thin-disk galaxies
James Q. Feng and C. F. Gallo ................................... 1429
The nature of orbits in a prolate elliptical galaxy model with a bulge and a dense nucleus
Nicolaos D. Caranicolas and Euaggelos E. Zotos .......................... 1449
On pulsar-driven mass ejection in low-mass X-ray binaries
Lei Fu and Xiang-Dong Li ........................................ 1457
CCD photometry of W UMa-type contact binaries in the old open cluster Berkeley 39
Yellapragada Ravi Kiron, Kandulapati Sriram and Pasagada Vivekananda Rao ........ 1469
The prediction method of similar cycles
Zhan-Le Du and Hua-Ning Wang ................................. 1482