

CONTENTS

Foreword	100
Contents	101
COSMOLOGY, GRAVITATION, ASTROPARTICLE PHYSICS, HIGH ENERGY PHYSICS	
ASPECTS OF STRING PHENOMENOLOGY IN PARTICLE PHYSICS AND COSMOLOGY	
Antoniadis I.	105
DISCRETE COSMOLOGY APPLICATION CONCERNING DARK MATTER HALOS	
Brilenkov R.D.	113
THE DOMINANCE OF DARK ENERGY LEADS TO REDUCTION OF THE ENTROPY OF GALAXIES FLOW AND ENTROPY OF THE UNIVERSE	
Bukalov A.V.	114
THE MODEL FOR FINAL STAGE OF GRAVITATIONAL COLLAPSE MASSLESS SCALAR FIELD	
Gladush V.D., Mironin D.V.	116
FIVE DIMENSIONAL BOOSTS AND ELECTROMAGNETIC FIELD IN KALUZA-KLEIN THEORY	
Gladush V.D., Al-Shawaf Nadim....	121
STABILITY OF STELLAR SYSTEMS ORBITING SGR A*	
Kahil Magd E.	126
PERTURBATIONS OF FRIEDMAN-LEMAITRE-ROBERTSON-WALKER SPACETIMES IN GEROCH-HELD-PENROSE FORMALISM	
Novák J.	132
THE DETERMINATION OF THE MORPHOLOGICAL TYPES OF GALAXY CLUSTERS USING CLUSTER CARTOGRAPHY	
Panko E.A., Emelyanov S.I.	135
BIG RIP AND OTHER SINGULARITIES IN ISOTROPIC HOMOGENEOUS COSMOLOGICAL MODELS WITH ARBITRARY EQUATION OF STATE	
Parnovsky S.L.	137
ON THE MECHANISM OF THE FORMATION OF MAGNETOHYDRODYNAMIC VORTICES IN THE SOLAR PLASMA	
Pashitskii E.A.	141
THE PROPERTIES OF TIDAL FORCES IN THE KERR METRIC	
Rasulova A.M.	147
X-RAY SPECTRAL PROPERTIES OF THE ISOLATED AGNs: NGC 1050, NGC 2989, ESO 317-038, ESO 438-009	
Vavilova I.B., Vasylenko A.A., Babyk Iu.V., Pulatova N.G.	150
ASTROPHYSICS	
THE KINEMATICS PARAMETERS OF THE GALAXY USING DATA OF MODERN ASTROMETRIC CATALOGUES	
Akhmetov V.S., Fedorov P.N., Velichko A.B., Shulga V.M.	154
"ASYMPTOTIC PARABOLA" FITS FOR SMOOTHING GENERALLY ASYMMETRIC LIGHT CURVES	
Andrych K.D., Andronov I.L., Chinarova L.L., Marsakova V.I.	158
A MODIFICATION OF GAUSS' METHOD FOR PRELIMINARY DETERMINATION OF A CELESTIAL BODY'S ORBIT	
Bazyey A.A.	161
RESULTS OF DOUBLE STARS OBSERVATIONS AT NIKOLAEV OBSERVATORY	
Bodryagin D.V., Maigurova N.V.	163

INVESTIGATION OF DIFFUSE INTERSTELLAR BANDS OF ORGANIC MOLECULES
IN THE SPECTRA OF CEPHEID STARS

Kashuba S.V., Andrievsky S.M., Chehonadskih F.A., Korotin S.A., Kovtyukh V.V., Luck R.E.....	166
NUCLEAR MAGICS AT MAGNETOROTATIONAL SUPERNOVA EXPLOSION	
Kondratyev V.N., Korovina Yu.V., Mishenina T.V.	168
THREE-DIMENSIONAL NUMERICAL HYDRODYNAMICAL SIMULATION OF LOW/HARD AND HIGH/SOFT STATES IN ACCRETION DISCS OF MICROQUASARS AND QUASARS ON BASE OF UNDEFINED PRECESSION	
Nazarenko V.V., Nazarenko S.V.....	171
THE RELATIVE WAVELENGTH INDEPENDENCE OF IR LAGS IN ACTIVE GALACTIC NUCLEI: IMPLICATIONS FOR THE DISTRIBUTION OF THE HOT DUST	
Oknyansky V.L., Gaskell C.M., Shimanovskaya E.V.....	175
REVISION OF THE PHENOMENOLOGICAL CHARACTERISTICS OF THE ALGOL-TYPE STARS USING THE NAV ALGORITHM	
Tkachenko M.G., Andronov I.L., Chinarova L.L.	181
PHOTOMETRY AND MODULATION OF LIGHT CURVES IN THE BLAZHKO STAR V365 HER	
Udovichenko S.N.	186

Subsection “VIRTUAL OBSERVATORIES AND INTENSIVE DATA”

COMPARISON OF ZERO ZONE CATALOGUES OF THE FON PROGRAM
BASED ON THE KYIV AND KITAB OBSERVATIONS

Andruk V.M., Relke H., Protsyuk Yu.I., Muminov M.M., Ehgamberdiev Sh.A., Yuldashev Q.X., Golovnia V.V.	188
CATALOG OF POSITIONS AND B MAGNITUDES OF STARS IN THE CIRCUMPOLAR REGION OF NORTHERN SKY SURVEY (FON) PROJECT	
Andruk V.M., Pakuliak L.K., Golovnia V.V., Ivanov G.A., Yizhakevych O.M., Protsyuk Yu.I., Shatokhina S.V.....	192
CATALOGUES OF THE FAINT OBJECTS IN THE AREAS WITH GAMMA-RAY BURSTS	
Golovnia V.V., Protsyuk Yu.I., Andruk V.M., Vavilova I.B., Pakuliak L.K., Kulyk I.V., Romanyuk Ya.O., Baransky O.R.	196
RESEARCH OF THE LONG-TERM BEHAVIOUR OF THE PLEIADES BY USING OF PHOTOGRAPHIC PLATES FROM UKRVO DIGITAL ARCHIVE AND BALDONE OBSERVATORY	
Kazantseva L.V., Andruk V.M., Shatokhina S.V., Protsyuk Yu.I., Eglitis I., Eglite M.	198
CROSS-MATCHING OF VERY LARGE CATALOGS	
Martynov M.V., Bodryagin D.V.	200
DETERMINATION OF PROPER MOTIONS OF CIRCUMPOLAR STARS BY USING IMAGES FROM UKRVO PLATE ARCHIVES	
Protsyuk Yu., Andruk V., Mazhaev A., Kovylianska O., Protsyuk S., Golovnya V.	202
DATA PROCESSING OF PLATES CONTAINING IMAGES OF URANUS AND NEPTUNE FROM UKRVO DIGITAL ARCHIVE: STRUCTURE, QUALITY ANALYSIS	
Protsyuk Yu., Yizhakevych O., Kovylianska O., Protsyuk S., Andruk V., Kashuba S., Kazantseva L.	204
CREATION OF LARGE CATALOGUES BY USING OF VIRTUAL OBSERVATORIES	
Protsyuk Yu.I., Kovalchuk O.M.	207
THE COMPILED CATALOGUE OF PHOTOELECTRIC UBVR STELLAR MAGNITUDES IN THE TYCHO2 SYSTEM	
Relke E., Protsyuk Yu.I., Andruk V.M.	211
CATALOG OF ASTRONOMICAL POSITIONS OF SATURN'S MOONS OBTAINED BY PHOTOGRAPHIC OBSERVATIONS AT THE MAO NASU IN 1961-1991	
Yizhakevych O.M., Andruk V.M., Pakuliak L.K.	213

RADIOASTRONOMY**THE STUDY OF EXTRAGALACTIC SOURCES 3C 446 AND 3C 345 WITH USING
THE SINGULAR SPECTRUM AND WAVELET ANALYSIS**

Donskykh G.I., Ryabov M.I., Sukharev A.L., Aller M.F..... 217

**MONITORING THE COMMUNICATION CHANNEL FROM PUSCHSHINO
TO MOSCOW IN THE PROJECT OF SPACE RADIO TELESCOPE "RADIOASTRON"**

Dumsky D.V., Isaev E.A., Samodurov V.A., Isaev K.A..... 222

**SECULAR DECREASE THE FLUX OF SUPERNOVA REMNANT CAS A ON
MONITORING RESULTS TO RADIOTELESCOPE "URAN-4" IRA NASU**

Gorbynov A.A., Ryabov M.I., Panishko S.K. 224

LIGHT CURVE TYPES OF CLASSIC T TAURI STARS

Ismailov N.Z., Adygezalzade H.N. 227

HE I 5876 LINE STRUCTURE IN THE SPECTRA OF IL CEP A

Ismailov N.Z., Khalilov O.V., Bahaddinova G.R. 231

**SEASONAL VARIATIONS OF THE IONOSPHERE SCINTILLATIONS PARAMETERS
OBTAINED FROM THE LONG OBSERVATIONS OF THE POWER COSMIC RADIO
SOURCES AT THE DECAMETER WAVE RANGE**

Lytvynenko O.A., Panishko S.K. 235

**LUMINOSITY-LINEAR SIZE RELATION FOR GALAXIES AND QUASARS WITH
STEEP RADIO SPECTRUM**

Miroshnichenko A.P. 238

**THE DAILY 110 MHZ SKY SURVEY (BSA FIAN): ON-LINE DATABASE,
SCIENCE AIMS AND FIRST RESULTS OF DATA PROCESSING**

Samodurov V.A., Rodin A.E., Kitaeva M.A., Isaev E.A., Dumsky D.V.,

Churakov D.D., Manzyuk M.O. 242

HIGH-FREQUENCY CUTOFF IN TYPE III BURSTS

Stanislavsky A.A., Konovalenko A.A., Volvach Ya.S., Koval A.A. 246

**ON THE E/P-COSMIC RAYS AS MEDIATORS OF VISCOUS FORCES THAT CREATE
SHOCK AND VORTEX STRUCTURES IN THE RADIO GALAXIES**

Tsvyk N.O. 248

DECAMETER PULSARS AND TRANSIENTS SURVEY OF THE NORTHERN SKY.**STATUS, FIRST RESULTS, MULTIPARAMETRIC PIPELINE FOR CANDIDATE SELECTION**

Zakharenko V.V., Kravtsov I.P., Vasylieva I.Y., Mykhailova S.S., Ulyanov O.M.,

Shevtsova A.I., Skoryk A.O., Zarka P., Konovalenko O.O. 252

SUN, SOLAR ACTIVITY AND ASTROBIOLOGY**EVALUATION OF CORONAL SHOCK WAVE VELOCITIES FROM THE
II TYPE RADIO BURSTS PARAMETERS**

Galanin V.V., Isaeva E.A., Kravetz R.O. 256

**CONNECTION BETWEEN THE CME VELOCITIES AND DECAMETER RADIO BURSTS
PARAMETERS FROM URAN-4 OBSERVATIONS**

Galanin V.V., Isaeva E.A., Kravetz R.O. 259

**THE REACTION OF PHOSPHORUS-CONTAINING INTRACELLULAR
INCLUSIONS TO SPACE WEATHER CHANGES**

Gromozova E.N., Kachur T.L., Voychuk S.I., Kharchuk M.S. 261

LONGTERM CHANGES OF SOLAR ACTIVITY ASYMMETRY

Leiko U.M. 264

**PROBLEM OF MISTAKES IN DATABASES, PROCESSING AND INTERPRETATION
OF OBSERVATIONS OF THE SUN. I.**

Lozitska N. I. 266

SIMULTANEOUS MAGNETIC FIELD MEASUREMENTS IN SUNSPOTS USING
SPECTRAL LINES WITH DIFFERENT LANDE FACTORS

Osipov S.N., Lozitsky V.G..... 268

PECULIARITIES OF A GROUP RESPONSE OF CARDIOVASCULAR SYSTEM OF
VOLUNTEERS AT DIFFERENT LATITUDES TO CHANGES OF SPACE WEATHER
PARAMETERS

Parshina S.S., Samsonov S.N., Manykina V.I., Afanasyeva T.N., Vishnevsky V.V., Petrova P.G.,

Petrova V.D., Strekalovskaya A.A., Tokayeva L.K., Kaplanova T.I., Potapova M.V. 270

SUN'S POLAR MAGNETIC FIELD REVERSALS IN SOLAR CYCLE 24

Pishkalo M.I., Leiko U.M..... 272

SOLAR SYSTEM

THE PHYSICAL PARAMETERS OF THE GAS AND DUST IN COMETARY ATMOSPHERES

Churyumov K.I., Ponomarenko V.O., Kleschonok V.V. 274

STUDY OF QUASI-PERIODIC VARIATIONS IN DRAG OF ARTIFICIAL SATELLITE
DURING 23–24 SOLAR CYCLES

Komendant V.H., Ryabov M.I., Sukharev A.L. 277

The Study of Indicatrices of Space Object Coatings

in a Controlled Laboratory Environment

Koshkin N., Burlak N., Petrov M., Strakhova S. 281

RESEARCHES OF LONG-TERM VARIATIONS IN URANUS AND NEPTUNE SPECTRA

Kuznyetsova Yu., Vidmachenko A., Matsiaka O., Shliakhetskaya Y., Yushkin M.,
Krushevskaya V. 285

IDENTIFICATION OF EMISSION LINES IN A METEOR SPECTRUM OBTAINED
ON AUGUST 2, 2011

Mozgova A.M., Borovicka J., Spurny P., Churyumov K.I. 289

THE RESULTS OF OBSERVATIONS OF MUTUAL PHENOMENA OF THE GALILEAN
SATELLITES OF JUPITER IN 2009 AND 2015 IN NIKOLAEV ASTRONOMICAL
OBSERVATORY

Pomazan A., Maigurova N., Kryuchkovskiy V. 292

SYNCHRONIZATION OF TERRESTRIAL PROCESSES WITH FREQUENCIES OF THE
EARTH-MOON-SUN SYSTEM

Sidorenkov N.S..... 295

EFFECT OF NON-SPHERICITY OF GRAVITATIONAL FIELD OF THE ASTEROID
ON THE ITS SATELLITES ORBITS EVOLUTION

Troianskyi V.V. 299