

C U R R I C U L U M V I T A E
Dr ZORAN KNEŽEVIĆ, Research Professor

Born: 23.8.1949., Osijek (Croatia)

Education

B.S., Astronomy, Belgrade University, 1972
M.Sc., Celestial Mechanics, Belgrade University, 1976
Ph.D., Celestial Mechanics, Belgrade University, 1989

Research Interests

Dynamical and physical processes in the solar system
Long-term orbital evolution of planets and asteroids
Determination of asteroid proper orbital elements
Ages of asteroid families
Asteroid preliminary orbit determination
Analytical theories of motion of lunar orbiters
Determination of asteroid masses
Statistical analyses of asteroids
Astrometry and photometry of small solar system objects

Experience

Employed at Astronomical Observatory, Belgrade, 1973 – present
(Department for Absolute Right Ascensions, 1973–1976
Department for Minor Planets, Comets, and Satellites, 1977–present)

Theoretical: Studies of statistical properties of the numbered minor planets sample and of selection effects involved in discoveries of minor planets; determination of orientations of asteroid rotation axes by means of the amplitude-magnitude method; collisional evolution of the asteroid belt and physical properties of asteroid families; computation of asteroid orbits; development of an analytical perturbation theory and of a purely numerical method (synthetic theory) for computation of asteroid mean and proper elements, asteroid family classification; analysis of the effects of mean motion and secular resonances, non-gravitational effects, chaotic dynamics, theory of motion of a lunar polar orbiter, search for the close encounters with large asteroids and determination of asteroid masses; etc. This work has led to several important results, the most significant ones pertaining to the correction, completion and improvement of a second order – fourth degree analytical theory of secular perturbations of asteroids, and derivation of a set of asteroid mean and proper elements computed by means of this theory, which are at present generally considered as the best available for the family classification purposes; in addition, a new field of research was opened, the one of the nonlinear secular resonances, and a pioneer work was done in that respect.

Observational: Examination and improvement of the auxiliary devices of the Large Transit Instrument of the Belgrade Observatory (vacuum meridian marks, collimators, levels, etc). Carried out a series of photographic observations of minor planets, which resulted in discovery of several new objects, and a number of photometrical observations of asteroids and variable stars.

Managerial: President of the National Committee for Astronomy of Yugoslavia (1993–1995; 1999–2006). Principal researcher in charge of the projects “Physics and motion of celestial bodies” (1993–1995) “Astrometrical, Astrodynamical and Astrophysical Investigations” (1996–2000), “Positions and Motion of Small Solar System Bodies” (2001–2005), “Dynamics of Celestial Bodies, Systems and Populations” (2006) Chairman of the Executive Board of the Observatory (1994–1997). Chairman of the Scientific Council and of the Workers Council of the Observatory. Director of the Astronomical Observatory of Belgrade (2002–present). Chairman of the Board for Geosciences and Astronomy of the Ministry of Science and Technological Development of Serbia (2002–2010), Vice-Chairman (2011–present). Chairman of the Sub-Regional European Astronomy Committee (2009–present).

Professional Activities

Associations:

International Astronomical Union - Commissions 7,15,20;
Member of the Organizing Committee of Comm. 15 (1991–1997)
Member of the Organizing Committee of Comm. 7 (1997–present)
Secretary of the Organizing Committee of Comm. 7 (2003–2006)
Vice-President of the Organizing Committee of Comm. 7 (2006–2009)
President of the Organizing Committee of Comm. 7 (2009–2012)
Member of the Organizing Committee of Div. 1 (2006–2012)
Member of the IAU Resolutions Committee (2009–2012)
Division of Planetary Sciences of the American Astronomical Society
Division of Dynamical Astronomy of the American Astronomical Society
Society of Astronomers of Serbia
Corresponding member of the Serbian Academy of Sciences and Arts (2009–present)

Visiting Scientist:

Institute of Astronomy of the Slovak Acad. Sci., Bratislava, Czechoslovakia, 1979
Osservatorio astronomico di Torino, Italy, 1983,1985,1989
Osservatorio astronomico di Milano, Italy, 1995,1997
Department of Astronomy of the University, Budapest, Hungary, 1985
Dipartimento di Matematica, Università di Pisa, Italy, 1987,1988,1990,1991,1992,1993, 1994,1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
Minor Planet Center, Cambridge, Massachusetts, U.S.A., 1988
Observatoire de la Côte D’Azour, Nice, France 1990,1992, 1994
Dipartimento di Matematica, Università di Padova, Italy, 2000
Observatoire de Meudon, Paris, France, 1992

Université Notre-Dame de la Paix, Namur, Belgium, 1995
Institute of Astronomy and Geophysics, Sao Paolo, Brasil, 1997

Educational:

Professor, Analytical Methods of Celestial Mechanics, Chaotic dynamics, Postgraduate/doctoral studies, Department of Mathematics, University of Belgrade, 1996-present
Lecturer, Quinzieme Ecole de Printemps d'Astrophysique de Goutelas, France, 1991
Teacher, General Astronomy, final class of high school, 1980,1981,1984

Programmatic:

LOC, 2nd National Conference of Yugoslav Astronomers, Belgrade, 1975
LOC, 6th European Regional Astronomy Meeting, Dubrovnik, 1981
LOC, Colloquium No. 100 of the IAU, Belgrade, 1987
SOC, 2nd International Workshop on Catastrophic Disruption of Small Solar System Bodies, Belgrade, 1987
Workshop Moderator for Asteroids, Comets, Meteors III, Uppsala, Sweden, 1988
SOC, 3rd International Workshop on Catastrophic Disruption of Small Solar System Bodies, Kyoto, Japan, 1990
SOC, Seventy-Five Years of Hirayama Collisional Families: Past, Present and Future, Tokyo, Japan, 1993
SOC, 11th National Conference of Yugoslav Astronomers, Belgrade, Co-Editor of the Proceedings, 1996
SOC, 13th National Conference of Astronomers of Serbia and Montenegro, Belgrade, 2002
SOC, IAU Colloquium 197: Dynamics of Populations of Planetary Systems, Co-chairman of SOC, and Co-editor of Proceedings
SOC, 14th National Conference of Astronomers of Serbia and Montenegro, Chairman of SOC and Co-Editor of the Proceedings, 2005
SAC, Actual Problems in Celestial Mechanics and Dynamical Astronomy, Cluj-Napoca, Romania, 2006
SOC, IAU Symposium 236 (XXVI GA) Near Earth Objects, our Celestial Neighbors: Opportunity and Risk, Prague, 2006
SOC, Latest Progress in Astrophysics, Athens, Greece, 2007
SAC, Studying Nature through Centuries, Belgrade, 2007
PC, Spring school on Strings, Cosmology and Particles, Belgrade, 2009
SOC, IAU Symposium 263 (XXVII GA) Icy Bodies of the Solar System, Rio de Janeiro, 2009
SOC, 6th Sub-Regional European Astronomical Committee (SREAC) Meeting Astrophysics and Astrodynamics in Balkan Countries in the International Year of Astronomy, Belgrade, 2009
SOC, 8th Alexandre von Humboldt Colloquium Resonances in n-body Systems, Bad Hofgastein, Austria 2011, Invited talk.
SOC Chairman, 300 Years from the Birth of Rudjer Boskovich, Belgrade, 2011, Editor of Proceedings

SOC, IAU Special Session SPS10 Dynamics of the Star-Planet Relation, Beijing, 2012
SOC, XII Congress of Physicists of Serbia, Vrnjačka Banja, Serbia, 2013
SOC, IAU Symposium 310 Complex Planetary Systems, Namur, Belgium, 2014, Co-Editor of the Proceedings
SOC, Past Climate: A Lesson for the future. Regional Climate Change Aspects, Belgrade, 2014
SOC, IAU Symposium 318 Asteroids: New Observations, New Models. Honolulu, 2015
Invited talk.

Editorial:

Editor-in-Chief of the Serbian Astronomical Journal and of the Publications of the Astronomical Observatory of Belgrade (2002–present). Member of the Editorial Board of the IAU (2005).

Languages

English, Italian