

## CURRICULUM VITAE

*Name:* Július  
*Surname:* Koza  
*Date of Birth:* February 4, 1970  
*Place of Birth:* Lučenec, Slovakia  
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### RESEARCH AREAS IN SOLAR PHYSICS

- solar network dynamics
- chromospheric fibrils and spicules
- interpretation of photospheric spectroscopy by inversions - Stokes Inversion based on Response functions (SIR)
- spectroscopy of the solar photosphere
- radiative transfer in stellar atmospheres - response functions

### ACADEMIC ACHIEVEMENTS

- 2000 – 2003: Ph.D. in Astrophysics, Astronomical Institute, Slovak Academy of Sciences, Ph.D. thesis defended on February 27, 2004, title: Modeling of the temporal evolution of the solar photosphere
- 1988 – 1993: M.S. in Astronomy and Astrophysics, Comenius University, Bratislava, Slovakia, title of the diploma work: Selection of the astrophysically interested absorption lines in the spectrum of the solar photosphere

### PUBLICATIONS

#### REFEREED JOURNALS AND REFEREED CONFERENCE PROCEEDINGS

1. **Koza, J.**, Kučera, A., Rybák, J., Wöhl, H.: 2006, “Photospheric modeling through spectral line inversion - Temperature and radial velocity stratifications and fluctuations”, *Astronomy & Astrophysics* **458**, 941
2. **Koza, J.**, Kučera, A., Rybák, J., Wöhl, H.: 2006, “The height dependence of quiet-sun photospheric temperature fluctuations in observations and simulations”, Proceedings of NSO Workshop #23: Solar MHD: *Theory and Observations - a High Spatial Resolution Perspective*, ed. J. Leibacher, H. Uitenbroek, & R. Stein, ASP Conference Proceedings Series, 43
3. Kučera, A., **Koza, J.**, Bellot Rubio, L.R., Hanslmeier, A., Rybák, J., Wöhl, H.: 2004, “Velocity field in intergranular atmosphere”, *Hvar Observatory Bulletin* **28**, 19
4. **Koza, J.**, Kučera, A.: 2003, “The range of reliability of the line-of-sight velocity in a semiempirical model of a granule”, *Contributions of the Astronomical Observatory Skalnaté Pleso* **33**, 224
5. **Koza, J.**, Bellot Rubio, L.R., Kučera, A., Hanslmeier, A., Rybák, J., Wöhl, H.: 2003, “Evolution of temperature in granule and intergranular space”, *Astronomische Nachrichten* **324**, No. 4, 349
6. **Koza, J.**, Kučera, A.: 2002, “Spectral line response to temperature perturbation in solar and spectral photospheric models”, *Contributions of the Astronomical Observatory Skalnaté Pleso* **32**, 190

#### NON-REFEREED CONFERENCE PROCEEDINGS

1. **Koza, J.**: 2004, “Spectral line response to temperature perturbation in solar and stellar photospheric models”, CD-ROM, 17<sup>th</sup> National Solar Conference, Stará Lesná, ed. I. Dorotovič (in Slovak)

2. **Koza, J.**, Bellot Rubio, L.R., Kučera, A., Rybák, J., Hanslmeier, A., Wöhl, H.: 2002, “Temporal evolution of physical parameters in granule”, Proc. Euroconference and IAU Colloquium 188: *Magnetic Coupling of the Solar Atmosphere*, ed. H. Sawaya-Lacosta, ESA - SP 505, 457
3. **Koza, J.**, Bellot Rubio, L.R., Kučera, A., Rybák, J., Hanslmeier, A., Wöhl, H.: 2002, “Line-of-sight velocity in a semiempirical model of a disappearing granule”, Proc. 10<sup>th</sup> European Solar Physics Meeting: *Solar Variability: From Core to Outer Frontiers*, ed. A. Wilson, ESA - SP 506, 443
4. **Koza, J.**, Bellot Rubio, L.R., Kučera, A., Rybák, J., Hanslmeier, A., Wöhl, H.: 2002, “Temporal evolution of physical parameters in granule”, Proceedings, 16<sup>th</sup> National Solar Conference, Turčianske Teplice, ed. I. Dorotovič, 36 (in Slovak)
5. Váňa, J., **Koza, J.**: 1996, “Occultation Timing in Žiar nad Hronom”, Almanach of European Symposium on Occultation Projects XIV, Plzeň, August 25.-30.8. 1995, 29

#### ARTICLES IN SLOVAK POPULAR MAGAZINES

- 2005
  1. Koza, J.: Venus Transit 2004 - results of astronomical unit measurements, *Kozmos* **36**, No. 2, 28
  2. Koza, J.: Earth-Sun distance as measured by observers in Slovakia, *Kozmos* **36**, No. 2, 31
  3. Koza, J.: Safe observation of Solar Eclipse, *Quark* **11**, No. 9, 45
- 2004
  1. Koza, J.: Evaluation of the project Venus Transit 2004, *Kozmos* **35**, No. 4, 30
  2. Koza, J., Kučera, A.: Venus Transit across the solar disc, *Kozmos* **35**, No. 2, 39
  3. Koza, J.: How we observed Venus Transit, *Quark* **10**, No. 8, 4
  4. Koza, J.: Safe observation of the Sun, *Quark* **10**, No. 6, 45
  5. Koza, J., Kučera, A.: Venus Transit across the solar disc, *Quark* **10**, No. 4, 4
- 1998
  1. Koza, J.: Comet Hale-Bopp in pictures, *Fototip*, No. 8, 15

#### PARTICIPATION IN RESEARCH PROJECTS

##### INTERNATIONAL PROJECTS

- 2007 – 2011: co-proposer and researcher in EC funded Marie Curie Reintegration Grant No 046474: Solar Network Dynamics (SoND)
- 2005 – 2007: co-proposer and researcher (postdoc) in EC funded Marie Curie Intra-European Fellowship MEIF-CT-2005-011379: Solar Fibrils and Spicules at High Resolution (MULTIDOT)
- 2002 – 2006: researcher in EC funded project HPRN-CT-2002-00313: European Solar Magnetism Network (ESMN)
- 2004: national node in EC funded project no. 508 963: Venus Transit 2004
- 2004: researcher in EC funded project OPTICON 2004/030 - DOT

##### NATIONAL PROJECTS

- 2006–2008: Grant VEGA SAV 2/6195/26, “Multi-spectral analyse and modeling of the temporal evolution of the quiet and active solar atmosphere”, member
- 2003–2005: Grant VEGA SAV 2/3015/23, “Dynamic processes and transfer of energy in the solar atmosphere”, member
- 2000–2002: Grant VEGA SAV 2/7229, “Magnetism, dynamics and variability of the solar atmosphere”, member

## PARTICIPATION IN CONFERENCES AND SCHOOLS

### INTERNATIONAL CONFERENCES

- 2006: Coimbra Solar Physics Meeting: *The Physics of Chromospheric Plasmas*, Coimbra, Portugal, 9. – 13. 10. 2006, poster: “DOT study of dynamic fibrils in plage”, presented by J. Koza
- 2006: International Workshop: *Modern Solar Facilities - Advanced Solar Science*, Göttingen, Germany, 27. – 29. 9. 2006, talk: “Photospheric modeling through spectral line inversion - Temperature and radial velocity stratifications and fluctuations”, presented by J. Koza
- 2006: Minisymposium on Radiative Transfer, Magnetohydrodynamics and Stellar Atmospheres, Sterrekundig Instituut Utrecht, The Netherlands, June 29, 2006
- 2005: NSO Workshop #23: Solar MHD: Theory and Observations - a High Spatial Resolution Perspective, SacPeak Observatory, U.S.A., 18. – 22. 7. 2005, poster: “Temporal evolution of physical parameters in the solar photosphere—results of inversion”, presented by A. Kučera
- 2004: The Venus Transit Experience Conference, Paris, France, 5. – 7. 11. 2004, poster: “Highlights of the Venus Transit in Slovakia”, co-author: Ing. J. Gerboš
- 2004: VII<sup>th</sup> Hvar Astrophysical Colloquium: *Solar Activity Cycle and Global Phenomena*, Hvar, Croatia, 20. – 24. 9. 2004, talk: “Response Functions of Spectral Lines Suitable for Diagnostics of Solar Rotation”, presented by J. Koza
- 2003: 1<sup>st</sup> Central European Solar Physics Meeting, Bairisch Kölldorf, Austria, 23. – 25. 10. 2003, talk: “Line-of-sight velocity in a semi-empirical model of an intergranular space”, presented by co-author A. Kučera
- 2002: VI<sup>th</sup> Hvar Astrophysical Colloquium: *Explosive phenomena in the solar atmosphere*, Hvar, Croatia, 6. – 11. 10. 2002, talk: “Semi-empirical model of a granule: On the range of reliability of line-of-sight velocity”, presented by co-author A. Kučera
- 2002: 10<sup>th</sup> European Solar Physics Meeting: *Solar Variability: From Core to Outer Frontiers*, Prague, Czech Republic, 9. – 14. 9. 2002, poster: “Temporal evolution of physical parameters in granule and intergranule”, presented by J. Koza
- 2002: International Workshop: *From the Gregory-Coudé Telescope to GREGOR – A Development from Past to Future*, Göttingen, Germany, 24. – 26. 7. 2002, talk: “Temporal evolution of physical parameters in granule and intergranule”, presented by J. Koza
- 2002: Euroconference and IAU Colloquium 188: *Magnetic Coupling of the Solar Atmosphere*, Santorini, Greece, 11. – 15. 6. 2002, poster: “Temporal evolution of physical parameters in a granule”, presented by J. Koza
- 1995: European Symposium on Occultation Projects, ESOP XIV, Plzeň, Czech Republic, 25. – 30. 8. 1995, talk: “Occultation Timing in Žiar nad Hronom”, presented by J. Koza

### INTERNATIONAL SCHOOLS

- 2004: 3<sup>rd</sup> ESMN School: *Solar Magnetometry and Solar Magnetism*, Astronomical Institute, Slovak Academy of Sciences, Tatranská Lomnica, Slovakia, 3. – 10. 11. 2004, talk and poster: “Temporal Evolution of Physical Parameters in the Solar Photosphere”, presented by J. Koza
- 2003: Summer School: *Radiative Transfer and Numerical MHD*, Institute of Theoretical Astrophysics, Oslo, Norway, 2. – 13. 6. 2003, talk: “Temporal evolution of physical parameters in granule and intergranule”, presented by J. Koza

### NATIONAL CONFERENCES

- 2004: 17<sup>th</sup> National Solar Conference, Stará Lesná, 24. – 28. 5. 2004, talk: “Spectral line response to temperature perturbation in solar and stellar photospheric models”, presented by: J. Koza
- 2002: 16<sup>th</sup> National Solar Conference, Turčianske Teplice, 3. – 7. 6. 2002, talk: “Temporal Evolution of Physical Parameters in Granule”, presented by: J. Koza

## AWARDS AND FELLOWSHIPS

- 2005: Marie Curie Intraeuropean Fellowship, MEIF-CT-2005-011379 (MULTIDOT), Sterrekundig Instituut Utrecht, The Netherlands, supervisor: Prof. R. J. Rutten, July 1, 2005 – June 30, 2007
- 2005: Prize of Slovak Academy of Sciences for popularisation of science
- 2003: Marie Curie Fellowship, HPMT-CT-2000-00132, Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain, supervisor: Dr. M. Collados, January 17, 2003 – April 16, 2003

## PARTICIPATION IN OBSERVATIONAL CAMPAIGNS

- 2006: Swedish Solar Telescope, Dutch Open Telescope, Observatorio del Roque de los Muchachos, La Palma, Canary Islands, Spain, April 11 – April 25, 2006
- 2005: Swedish Solar Telescope, Dutch Open Telescope, Observatorio del Roque de los Muchachos, La Palma, Canary Islands, Spain, October 16 – October 31, 2005
- 2004: German Vacuum Tower Telescope, Observatorio del Teide, Izaña, Tenerife, Canary Islands, Spain, July 3 – July 18, 2004
- 2004: Dutch Open Telescope, Observatorio del Roque de los Muchachos, La Palma, Canary Islands, Spain, July 12 – July 13, 2004

## TALKS AT UNIVERSITIES AND INSTITUTES

- 2006: Colloquia of Sterrekundig Instituut, Universiteit Utrecht, title: “Quiet solar photosphere seen by the SIR code: comparison of observations and simulations”, February 10, 2006
- 2006: Solar Physics Group Meeting, Sterrekundig Instituut, Universiteit Utrecht, title: “Sensitivity of the spectral line Ba II 4554 Å to the velocity”, March 16, 2006
- 2005: USO Seminar, Swedish Solar Telescope, Observatorio del Roque de los Muchachos, La Palma, Canary Islands, Spain, title: “Response functions of spectral lines suitable for diagnostics of the solar rotation”, October 31, 2005

## COLLOQUIA OF ASTRONOMICAL INSTITUTE, SLOVAK ACADEMY OF SCIENCES, TATRANSKÁ LOMNICA

- 2005: “Response functions of spectral lines suitable for diagnostics of the solar rotation”, February 15, 2005
- 2005: “Evaluation of the project Venus Transit 2004 and results of the measurements of the astronomical unit”, January 12, 2005
- 2004: “Semiempirical model of the solar photosphere and its variations in time span of 15 min”, February 17, 2004
- 2001: “Modeling of the temporal evolution of the solar photosphere by inversion method”, October 3, 2001

## VISITING SCHOLAR

- 2005: Instituto de Astrofísica de Canarias, La Laguna, Canary Islands, Spain, November 2, 2005
- 2004: Kiepenheuer-Institut für Sonnenphysik, Freiburg, Germany, February 2 – February 14, 2004
- 2002: Kiepenheuer-Institut für Sonnenphysik, Freiburg, Germany, October 21 – November 11, 2002
- 2001: Instituto de Astrofísica de Canarias, La Laguna, Canary Islands, Spain, May 14 – June 4, 2001
- 2001: The University Observatory Göttingen, Germany, January 19 – January 29, 2001

## PAST AND POSTDOCTORAL EXPERIENCES

- 01/07/2005 – now: a postdoc under Marie Curie Intraeuropean Fellowship (MEIF-CT-2005-011379) at Sterrekundig Instituut, Universiteit Utrecht, The Netherlands
- 01/01/2005 – 30/06/2005: a scientist, Department of Solar Physics, temporary position at the Astronomical Institute, Slovak Academy of Sciences, Slovakia
- 01/10/2003 – 31/12/2004: an astronomer-assistant, Department of Solar Physics, Astronomical Institute, Slovak Academy of Sciences, Slovakia

- 01/07/2000 – 30/09/2003: a Ph.D. student, Astronomical Institute, Slovak Academy of Sciences, Slovakia
- 22/11/1994 – 31/10/1999: an astronomer, Observatory and planetarium of Maximilian Hell in Žiar nad Hronom, Slovakia
- 01/08/1994 – 31/10/1994: a Network Administrator in Employments Bureau in Lučenec, Slovakia
- 01/11/1993 – 30/06/1994: a teacher of physics at an elementary school in Lučenec, Slovakia

## TEACHING AND SUPERVISING EXPERIENCES

- 2006: tutoring the astronomical practicum on The orbits of the Galilean Moons for 1st year undergraduate students at Physics department of the Utrecht University
- 2006: a co-supervisor of the research of Erasmus student A. Tchirová from Pavol Jozef Šafárik University, Košice, student project: Sensitivity of the spectral line Ba II 4554 Å to velocity
- 2004: tutoring the practicum on solar physics for 3rd year undergraduate students from Pavol Jozef Šafárik University, Košice

## MEMBERSHIPS IN SOC AND LOC

- 2004: 3<sup>rd</sup> ESMN School: *Solar Magnetometry and Solar Magnetism*, Astronomical Institute, Slovak Academy of Sciences, Tatranská Lomnica, Slovakia, 3. – 10. 11. 2004, member of the LOC
- 2003: International Solar Cycle Studies (ISCS) 2003 Symposium: *Solar Variability as an Input to the Earth's Environment*, June 23, – 28, 2003, Tatranská Lomnica, member of the LOC

## OTHER ACTIVITIES

- head of expedition organized by Observatory and planetarium of Maximilian Hell in Žiar nad Hronom, 9. – 14. 8. 1999, Total solar eclipse, 11.8. 1999, Velem (Hungary)
- occasional editor of the astronomical outreach webpage for public: [www.astro.sk/news/](http://www.astro.sk/news/) (in Slovak)
- involvement in Occultation Astronomy: successfully observed events

### *DATE/PLACE/EVENT/*

### *CELESTIAL BODY(IES)/METHOD(S) OF RECORDING*

- April 26, 2005/Astronomical Institute SAS, Tatranská Lomnica/Lunar Occultation/  
 $\alpha$  Sco (Antares, 0.9 mag)/visual+video+photo
- January 29, 2004/Astronomical Institute SAS, Tatranská Lomnica/Asteroidal Occultation/  
HIP 27972 (7.3 mag) + (308) Polyxo/CCD drift scan + fast photometry + visual
- September 26, 2003/Astronomical Institute SAS, Tatranská Lomnica/Asteroidal Occultation/  
TYC 5184-01124-1 (11.3 mag) + (85) Io/fast photometry
- September 26, 2003/Astronomical Institute SAS, Tatranská Lomnica/Asteroidal Occultation/  
TYC 0570-01150-1 (11.8 mag) + (709) Fringilla/fast photometry
- September 17, 2002/Divín/Asteroidal Occultation/  
 $\omega^1$  Tau (5.5 mag) + (345) Tercidina/visual
- March 9, 2002/Astronomical Institute SAS, Tatranská Lomnica/Asteroidal Occultation/  
TYC 1898-00944-1 (11.4 mag) + (1107) Lictoria/fast photometry
- January 16, 2000/Mýtňa/Grazing Occultation/  
5 Tau (4.1 mag)/visual
- February 5, 1998/Nové Zámky/Grazing Occultation/  
 $\alpha$  Tau (Aldebaran, 0.8 mag)/visual