

TOMÁŠ HENYCH

PERSONAL INFO

Date and place of birth 15th March 1984 · Ústí nad Labem, Czechia
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Czechia
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WORK EXPERIENCE

since 01/2024 **Researcher** at the Interplanetary matter department
Astronomical Institute, The Czech Academy of Sciences, Ondřejov, Czechia
01/2020–12/2023 **Postdoc researcher** at the Interplanetary matter department
Astronomical Institute, The Czech Academy of Sciences, Ondřejov, Czechia
06/2019–10/2019 **Tour guide** at Northern Hikes s. r. o., Praha, Czechia
04/2018–04/2019 **Freelance lecturer** at Mobile planetarium z.ú., Praha, Czechia
12/2017–01/2018 **Freelance proofreader** at Alza.cz a.s., Praha, Czechia
01/2016–08/2017 **Research scholar** at the Aeronautics & Astronautics
University of Washington, Seattle, WA, USA
01/2014–12/2015 **Postdoc researcher** at the Interplanetary matter department
Astronomical Institute, The Czech Academy of Sciences, Ondřejov, Czechia
02/2013–12/2013 **Researcher** at the Dept. of Theoretical Physics and Astrophysics
Faculty of Science, Masaryk University, Brno, Czechia
02/2009–12/2013 **Researcher and technical maintainer** at the Center for Biomedical
Image Analysis, Faculty of Informatics, Masaryk University, Brno,
Czechia
07/2009–09/2012 **Doctoral student** at the Interplanetary matter department
Astronomical Institute, The Czech Academy of Sciences, Ondřejov, Czechia

EDUCATION

2008–2013 **Ph.D. in Astrophysics**
Dept. of Theoretical Physics and Astrophysics
Faculty of Science, Masaryk University, Brno, Czechia
Thesis Supervisor: Petr Pravec
Title: Excitation of asteroid rotations through impacts
2006–2008 **Mgr. (equiv. to M.Sc.) in Astrophysics**
Faculty of Science, Masaryk University, Brno, Czechia
2003–2006 **Bc. in Applied physics – Astrophysics**
Faculty of Science, Masaryk University, Brno, Czechia

SKILLS

Languages Czech (native), English (fluent), German (beginner)
Computer FORTRAN, Mathematica, Bash, Awk, Gnuplot, Octave, Tcl/Tk, LaTeX, Maple,
various Linux distributions
Driving licence B category

RESEARCH ACTIVITIES

- parallel genetic algorithm optimization
- numerical modeling of meteoroid fragmentation in the atmosphere
- interpretation of asteroid family size distributions using impact scaling relations
- Monte Carlo model for collisional evolution of asteroid sizes and spins
- subcatastrophic asteroid collisions computer model, statistical evolutionary model of asteroid rotation excitation, collisional origin of excited rotation of asteroids
- asteroid photometry observations

RESEARCH INTERESTS

- meteoroid mechanical and physical properties
- characterization of meteoroid sources
- collisional physics of asteroid families
- evolution of asteroid rotations and shapes, collisions between asteroids, impact cratering
- tumbling asteroids – excited rotation, rotational dynamics
- binary asteroids – tidal effects, lightcurves of the binaries
- astronomical observation – photometry, astrometry
- confocal fluorescence microscopy – image acquisition, analysis, and deconvolution, correction of the image aberrations, PSF measurement

OBSERVING PROPOSALS

Oct 2015 Tycho Brahe P3, ESO/MPG 2.2m telescope, FEROS, La Silla Observatory, Chile;
T. Henych, S. Czesla, C. Ginski, T. Klocova, V. Perdelwitz, T.O.B. Schmidt;
Accretion and activity on the candidate planet hosting T Tauri star DH Tau
Nov 2014 Tycho Brahe P1, ESO/MPG 2.2m telescope, WFI, La Silla Observatory, Chile;
T. Henych, T. Krejcova, S. Raetz, T.O.B. Schmidt; Multi-color photometric
follow-up of the youngest planetary transit candidate CVSO 30

CONFERENCES, WORKSHOPS, SUMMER SCHOOLS

- 06/2023 **Asteroids, Comets, Meteors Conference** (contributed talk), Flagstaff, AZ, USA
06/2022 **Meteoroids 2022** (contributed talk), virtual
10/2016 **48th Division for Planetary Sciences Conference/11th European Planetary Science Congress** (contributed talk), Pasadena, CA, USA
03/2016 **47th Lunar and Planetary Science Conference** (poster), The Woodlands, TX, USA
02/2015 **Stardust ITN – Local training workshop: Collisions in the Solar System** (contributed talk), Belgrade, Serbia
06/2013 **8th Workshop on Catastrophic Disruption in the Solar System** (contributed talk) and **3rd Workshop on Binaries in the Solar System**, Hawai'i, The Big Island, USA
07/2010 **Advanced methods in optical fluorescence microscopy towards nanoscopy**, summer course of the International School of Physics 'Enrico Fermi' (Italian Physical Society), Varenna, Italy

OBSERVING EXPERIENCE

- 0.5m 10 nights (2012), photoelectric photometry, South African Astronomical Observatory Sutherland, South Africa
1.54m 10 nights (2009), CCD photometry, Danish Telescope, La Silla, ESO, Chile
0.6m 100 nights, Masaryk University Observatory, Brno, Czechia

TEACHING EXPERIENCE

- fall 2011, 2012 Teaching Assistant, Introductory astronomical course (introduction to astronomical observation)
fall 2008– Teaching Assistant, Astronomical exercises (observation methods, spring 2012 data processing)

POPULARIZATION

- Researchers night, doors open days, Astronomical institute, Ondřejov
- public lectures for students and children, DDM Modřany, Prague
- lecturer at Mobile planetarium, z.ú., Prague
- Researchers night 2007, "Noc bez CCD", similar public events, Masaryk University Observatory, Brno

HOBBIES

hiking, music, movies, travelling, photography, stargazing, learning and trying new things

LIST OF PUBLICATIONS

PAPERS ([TINYURL.COM/KUKKWQB](https://tinyurl.com/kukkwqb))

1. **Henych, T.**, Borovička, J., Vojáček, V., Spurný, P., 2024. Mechanical strength distribution in Geminid meteoroids derived via fireball modeling. Accepted for publication in *A&A*, 13pp.
2. Koten, P. et al. (including **T. Henych**), 2023. τ Herculid meteor shower in the night of 30/31 May 2022 and the meteoroid properties. *A&A* 675, 15pp.
3. **Henych, T.**, Borovička, J., Spurný, P., 2023. Semi-automatic meteoroid fragmentation modeling using genetic algorithms. *A&A* 671, 16pp.
4. **Henych, T.**, Holsapple, K. A., 2018. Interpretations of family size distributions: The Datura example. *Icarus* 304, 127–134.
5. **Henych, T.**, Pravec, P., 2015. Slowly increasing elongations of non-spherical asteroids caused by collisions. *MNRAS* 454, 1704–1710.
6. Sebera, J. et al. (including **T. Henych**), 2015. Spheroidal models of the exterior gravitational field of Asteroids Bennu and Castalia. *Icarus* 272, 70–79.
7. Raetz, St. et al. (including **T. Henych**), 2015. YETI observations of the young transiting planet candidate CVSO 30 b. *MNRAS* 460, 2834–2852.
8. **Henych, T.**, Pravec, P., 2013. Asteroid rotation excitation by subcatastrophic impacts. *MNRAS* 432, 1623–1631.
9. Hanuš, J. et al. (including **T. Henych**), 2011. A study of asteroid pole-latitude distribution based on an extended set of shape models derived by the lightcurve inversion method. *A&A* 530, A134, 16pp.
10. Pravec, P. et al. (including **T. Henych**), 2010. Formation of asteroid pairs by rotational fission. *Nature* 466. 1085–1088.

ABSTRACTS OF TALKS, POSTERS

1. **Henych, T.**, Borovička, J., Spurný, P., June 2023. Mechanical Strength of Geminid Meteoroids from Detailed Modeling. Contributed talk at Asteroids, Comets, Meteors Conference, Flagstaff, AZ, USA.
2. **Henych, T.**, Borovička, J., Spurný, P., June 2022. Robust Semi-Automatic Fireball Modeling. Contributed talk at Meteoroids 2022, virtual.
3. **Henych, T.**, Holsapple, K. A., October 2016. New insights into main belt asteroid collisional lifetimes. Contributed talk at 48th DPS/11th EPSC, Pasadena, CA, USA.
4. Holsapple, K. A., **Henych, T.**, March 2016. Let's spin'em all. Poster at 47th LPSC, The Woodlands, TX, USA.
5. **Henych, T.**, Pravec, P., June 2013. Asteroid rotation excitation by subcatastrophic impacts. Contributed talk at 8th Workshop on Catastrophic disruption in the Solar System. Hawai'i, The Big Island, USA.

6. Scheeres, D. et al. (including **T. Henych**), 2010. Asteroid Pairs Formed by Rotational Fission. In: Bulletin of the American Astronomical Society, Division of Dynamical Astronomy Meeting #41. p. 926.