

Dr. Eva Lilly (née Schunová)
Planetary Science Institute
1700 East Fort Lowell, Suite 106, Tucson, AZ, 85719-2395
Phone: +421-910-233-325 E-mail: elilly@psi.edu

Research Interests

Centaur, trans-Neptunian objects, near-Earth asteroids, planetary defense, asteroid surveys, asteroid population models, dynamical evolution of asteroids and comets, comets, solar system formation,

Education

- Ph.D. Astronomy, Comenius University, Bratislava, Slovakia (2012)
- M.S. Physics, Comenius University, Bratislava, Slovakia (2008)

Professional Experience

- 2022 – present Senior Scientist, Planetary Science Institute, AZ
- 2019 – 2022 Science Investigation Team member of the NASA NEO Surveyor mission
- 2019 – 2022 Research Scientist, Planetary Science Institute, AZ
- 2017 - 2019 Associate Research Scientist, Planetary Science Institute,
- 2014 – 11/2017 NEO Postdoctoral fellow, U. Hawai‘i Institute for Astronomy HI
- 11/2013 - 01/2014 Assistant researcher, Comenius U. Slovakia
- 03/2013 - 08/2013 Postdoctoral fellow, U. Hawai‘i Institute for Astronomy HI
- 2011 - 2012 Research Analyst, U. Hawai‘i Institute for Astronomy HI

Awards

- Asteroid (346999) Evalilly = 2010 CQ183
- 2023 - present PI or CO-I for numerous successful Gemini, HST, KECK and University of Hawai‘i’s 2.2m telescope observing proposals.
- 2023 - present NASA Solar System Observations grant
- 2019 - 2023 NASA Astronomy & Astrophysics grant
- 2014 - 2017 NEO Postdoctoral Fellowship
- 2013 ATLAS Postdoctoral Fellowship (short-term)

Service

- 2024 - present NSF NOIRlab panel service
- 2020 – present NSA PSD panel service
- 2019 – 2017 Member of the Las Cumbres Observatory time allocation committee
- 2016 – present Referee for MNRAS, Astronomical Journal, Planetary Science Journal

Peer-reviewed Publications:

- Lilly, E.**, P. Jevčák, C. Schambeau, K. Volk, J. Steckloff, H. Hsieh, Y. Fernandez, J. Bauer, R. Weryk, R. J. Wainscoat (2024), *Semimajor-axis Jumps as the Activity Trigger in Centaurs and High-perihelion Jupiter-family Comets*. ApJL, V 960, I 2, id. L8, 14 pp.
- Mainzer, A., Masiero, J., Abell, P., Bauer, J., Bottke,, **Lilly, Eva**, NEO Surveyor Mission Team (2023), *The Near-Earth Object Surveyor Mission*, PSJ 4, 12, id.224, 19 pp.
- Lilly, E.**, H. Hsieh, J. Bauer, J. Steckloff, P. Jevčák, R. Weryk, R. J. Wainscoat, and C. Schambeau (2021); *No Activity among 13 Centaurs Discovered in the PanSTARRS1 Detection Database*. PSJ 2(4), 155.
- Lister, Tim; Kelley, Michael S. P.; Holt, Carrie E.; Hsieh, Henry H.; Bannister, Michele T.; Verma, Aayushi A.; Dobson, Matthew M.; Knight, Matthew M.; Moulane, Youssef; Schwamb, Megan E.; Bodewits, Dennis; Bauer, James; Chatelain, Joseph; Fernández-Valenzuela, Estela; Gardener, Daniel; Gyuk, Geza; Hammergren, Mark; Huynh, Ky; Jehin, Emmanuel; Kokotanekova, Rosita; **Lilly, Eva**; Hui, Man-To; McKay, Adam; Opitom, Cyrielle; Protopapa, Silvia; Ridden-Harper, Ryan; Schambeau, Charles; Snodgrass, Colin; Stoddard-Jones, Cai; Usher, Helen; Wierzchos, Kacper; Yanamandra-Fisher, Padma A.; Ye, Quanzhi; Gomez, Edward; Greenstreet, Sarah (2022), *The LCO Outbursting Objects Key Project: Overview and Year 1 Status*, The Planetary Science Journal, Volume 3, Issue 7, id.173, 18 pp.
- Holman, Matthew J., Payne, Matthew J., Fraser, Wesley, Lacerda, Pedro, Bannister, Michele T., ..., **Lilly, E.**, + (2018), “*A Dwarf Planet Class Object in the 21:5 Resonance with Neptune*”, The Astrophysical Journal Letters, Volume 855, Issue 1, article id. L6, 9 pp
- McNeill, Andrew; Fitzsimmons, Alan; Jedicke, Robert; Lacerda, Pedro; **Lilly, Eva**; Thompson, Andrew; Trilling, David E.; DeMooij, Ernst; Hooton, Matthew J.; Watson, Christopher A. (2018), *Extreme Asteroids in the Pan-STARRS 1 Survey*, The Astronomical Journal, Volume 156, Issue 6, article id. 282, 19 pp. (2018).
- Moreno, F., Pozuelos, F. J., Novaković, B., Licandro, ... **Schunová-Lilly, E.**, + (2017), “*The Splitting of Double-component Active Asteroid P/2016 J1 (PANSTARRS)*”, The Astrophysical Journal Letters, Volume 837, Issue 1, article id. L3, 6 pp.
- Meech, Karen J., Kleyna, Jan T., Hainaut, Olivier, Micheli, Marco, Bauer, James, Denneau, Larry, Keane, Jacqueline V., Stephens, Haynes, Jedicke, Robert, Wainscoat, Richard, Weryk, Robert, Flewelling, Heather, **Schunová-Lilly, Eva**, Magnier, Eugene, Chambers, Kenneth C. (2017), *CO-driven Activity in Comet C/2017 K2 (PANSTARRS)*, The Astrophysical Journal Letters, Volume 849, Issue 1, article id. L8, 7 pp.

Schunová-Lilly, E., Jedicke, R., Vereš, P., Denneau, L., Wainscoat, R. J., (2017), “*The size-frequency distribution of $H>13$ NEOs and ARM target candidates detected by Pan-STARRS1*”, *Icarus*, Volume 284, p. 114-125.

Meech, Karen J., Weryk, Robert, Micheli, Marco, Kleyna, Jan T., Hainaut, Olivier R., Jedicke, Robert, Wainscoat, Richard J., Chambers, Kenneth C., Keane, Jacqueline V., Petric, Andreea, Denneau, Larry, Magnier, Eugene, Berger, Travis, Huber, Mark E., Flewelling, Heather, Waters, Chris, **Schunova-Lilly, Eva**, Chastel, Serge, 2017, “A brief visit from a red and extremely elongated interstellar asteroid”, *Nature*, Volume 552, Issue 7685, pp. 378-381.

Weryk, R. J., **Schunová-Lilly, E.**, Chastel, + (2016), “*Distant Solar System Objects identified in the Pan-STARRS1 survey*”, eprint arXiv:1607.04895.

Tóth, J., Svoreň, J., Borovička, ... **Schunová, E.**, + (2015), “*The Košice meteorite fall: Recovery and strewn field*”, *Meteoritics & Planetary Science*, Volume 50, Issue 5, pp. 853-863.

Hsieh, H. H. Hainaut, O., Novaković, B., Bolin, B., Denneau, L., Fitzsimmons, A., Haghhighipour, N., Kleyna, J., Kokotanekova, R., Lacerda, P., Meech, K. J., Micheli, M., Moskovitz, Nick, **Schunová, E.**, et al., 2015, *Sublimation-Driven Activity in Main-Belt Comet 313p/Gibbs*, *The Astrophysical Journal Letters*, Volume 800, Issue 1, article id. L16, 7 pp.

Schunová, E., Jedicke, R., Walsh, K. J., Granvik, M., Wainscoat, R.J., Haghhighipour, N., (2014), “*Properties and lifetimes of near-Earth object families created by tidal disruption*”, *Icarus*, Volume 238, p. 156-169.

Hsieh, H. H., Denneau, L., Fitzsimmons, A., ...**Schunová, E.**, + (2014), “*Search for the Return of Activity in Active Asteroid 176P/Linear*”, *Astronomical Journal* 147 (89).

Kohout, T., Havrila, K., Tóth, ...**Schunová, E.**, et al., (2014), “*Density, porosity and magnetic susceptibility of the Košice meteorite shower and homogeneity of its parent meteoroid*”, *Planetary and Space Science* 93, 96-100.

Schunová, E., Granvik, M., Jedicke, R., Gronchi, G., Wainscoat, R. J., Abe, S., (2012), “*Searching for the first Near-Earth Object family*”, *Icarus* 220 (2), 1050-1063

Hsieh, H. H., Yang, B., Haghhighipour, N., Novakovic, B., Jedicke, R., Wainscoat, R. J., Denneau, L., Abe, S., Chen, W.-P., Fitzsimmons, A., Granvik, M., Grav, T., Ip, W., Kaluna, H. M., Kinoshita, D., Kleyna, J., Knight, M. M., Lacerda, P., Lisse, C. M., MacLennan, E., Meech, K. J., Micheli, M., Milani, A., Pittichova, J., **Schunová, E.**, et al., (2012), *Observational and Dynamical Characterization of Main-Belt Comet P/2010 R2 (La Sagra)*, *The Astronomical Journal* 143 (5), article id. 104.

Selected Conference Proceedings:

Lilly, Eva; Jevčák, Peter; Schambeau, Charles (2022), *The Semi-major Axis Dips as the Activity Triggers in Centaurs and Distant Jupiter Family Comets*, 16th Europlanet Science

Congress 2022, held in Granada, Spain. Online at <https://www.epsc2022.eu/>, id. EPSC2022-1265

Jevčák, Peter ; **Lilly, Eva** ; Schambeau, Charles (2021), *Changes in activity of Centaur 2014 OG392 one year after its first detection*, AAS Division of Planetary Science meeting #53, id. 503.03. Bulletin of the American Astronomical Society, Vol. 53, No. 7 e-id 2021n7i503p03

Grav, Tommy; Mainzer, Amy; Sonnett, Sarah; Spahr, Timothy; Lilly, Eva; Masiero, Joseph (2021), *NEO Surveyor: Significant progress towards the Congressional mandate*, AAS Division of Planetary Science meeting #53, id. 303.03. Bulletin of the American Astronomical Society, Vol. 53, No. 7 e-id 2021n7i303p03

Lilly, E.; Spahr, T.; Grav, T. G.; Masiero, J.; Sonnett, S. S.; Mainzer, A.; Bauer, J.; Kramer, E.; Fernandez, Y.; Schambeau, C.; Wright, E. (2021), *Building the Reference Small Body Population Model*, 52nd Lunar and Planetary Science Conference, held virtually, 15-19 March, 2021. LPI Contribution No. 2548, id.2584

Spahr, Tim; Mainzer, Amy; Reddy, Vishnu; Grav, Tommy; Sonnett, Sarah; **Lilly, Eva**; Cutri, Roc; Masiero, Joseph; Payne, Matt; Veres, Peter; Spoto, Federica (2021), *Orbital and Sky Plane Uncertainties for NEO Surveyor Discoveries*, 7th IAA Planetary Defense Conference, held in Vienna, Austria, 26-30 April 2021, id. 213

Porubcan, V., Svoren, J., Neslusan, L., **Schunová, E.**, (2011), “*The Updated IAU MDC Catalogue of Photographic Meteor Orbits*”, Meteoroids, Proceedings of the Meteoroids Conference held in Breckenridge, Colorado, USA, 2010. Edited by W.J. Cooke, D.E. Moser, B.F. Hardin, and D. Janches. NASA/CP-2011-216469., p.338.