Jana Pittichová Chesley

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Experience

In my previous position, I worked for twelve years at the University of Hawaii's Institute for Astronomy (IfA). I have well over four hundred nights of experience with large-aperture instruments obtaining ground-based optical observations. I have extensive background in photometric and astrometric reduction of optical CCD imaging data for comets, NEOs, Centaurs and KBOs. Much of my effort at IfA was directed towards long-term ground-based observing support for the Deep Impact, Stardust, EPOXI, and Stardust-NExT NASA missions, including photometric and astrometric measurements and data calibration. As one of the main data analysts for the world-wide observing campaign associated with these missions, I was responsible for reducing data from optical telescopes all around the world. My first two years at JPL I was working on an extensive observing campaign for 2002 GT, the target for proposed extended Deep Impact mission. I used TMO 0.6-m telescope and Palomar 1.6-m telescope for astrometry, photometry, light curve and color observations. I took a long 3 years intermitted maternity leave and since early 2018 am dedicated most of my work effort to demonstrate observing capability of TMO1-m telescope. I have funded follow-up program and I am performing critical observations of newly discovered Near Earth Objects to improve their orbit and identify protentional hazardous objects. I am member of the NEOWISE team, working with data reduction, analyses and submission (WMOPS software). I also help to analyze various comet data and to conduct quality assurance analyses to help develop a machine learning system. Since 2019 I am member of a team to investigate physical properties of Main Belt Comets (MBCs) and potential new candidates. My team role is to lead optical observations at the Palomar 5-m telescope. In 2022/23 I was contributing observations to the DART mission. I was the lead observer at the TMO 1-m telescope to obtain dense data coverage for the Didymos phase function analysis. I am first author on 8 refereed publications and I am co-author on another 36. I am a contributor on over 350 MPEC and IAU circulars. During the last 24 years I have presented research results to over 30 international meetings.

Education

- PhD., Astronomy, Comenius University, 1999.
- M.A., Physics, Comenius University, 1995.

Scientific Membership

- International Astronomical Union (IAU)
- European Astronomical Society (EAS)
- American Astronomical Society (AAS)
- Division for Planetary Sciences (DPS)

Professional Experience

2013 – present	Scientist III, Small Bodies Group, JPL
2006 – 2011	Comet Nuclei Postdoctoral Specialist, Institute for Astronomy (IfA), University of Hawaii (UH), Honolulu, Hawaii

2000 – 2006 Junior Scientific Researcher, IfA, UH
1999 – 2000 NSF-NATO Postdoctoral Fellow, IfA, UH

Honors/Awards

2020 JPL Voyager Award for leading work on commissioning the TMO 1-m telescope for scientific investigations

2005 Asteroid 20187 Janapittichová named in honor of scientific and sport achievements

Research Activities

- Astrometry and Photometry of Small Bodies
- Binary Asteroid Light Curves
- Ground-based Mission Support
- Comet Physical Characterization

Outreach and Service Activities

- 2022 invited speaker at Astro camp for Rio Hondo Preparatory School
- 2022 appointed technical consultant for WaSP instrument in the Call for Palomar Observing Proposal
- 2022 presented research results and opportunities at Palomar Observatory Workshop
- 2021-2022 served as member on NASA Telescope Allocation Committee
- 2021 invited speaker at Astro camp for Rio Hondo Preparatory School
- 2020 member of NASA ROSES funding review panel
- 2020 invited speaker for JPL Summer Intern Introductory Seminar

List of Refereed Publications

Hsieh, H. H., Micheli, M., Kelley, M. S. P., Knight, M. M., Moskovitz, N. A., **Pittichová, J.**, et al., 2023, "Observational characterization of main-belt comet and candidate main-belt comet nuclei", PSJ, 4, 43

Satpathy, A., Mainzer, A., Masiero, J. R., Linder, T., Cutri, R. M., Wright, E. L., **Pittichová, J.,** Grav, T., Kramer, E., 2022: "NEOWISE Observations of the Potentionally Hazardous Asteroid (99942) Apophis": PSJ 3, 3, 124S

Hsieh, Henry H., Chandler, Colin O., Denneau, Larry, Fitzsimmons, Alan, Erasmus, Nicolas, Kelley, Michael S. P., Knight, Matthew M., Lister, Tim A., **Pittichová, J.**, Sheppard, Scott S., etc., 2021: "Physical Characterization of Main-belt Comet (248370) 2005 QN_{173}": ApJ, 922L, 9H

Masiero, J. R., Mainzer, A. K., Bauer, J. M., Cutri, R. M., Grav, T., Kramer, E., **Pittichová, J.,** Wright, E. L., 2021: "Asteroid Diameters and Albedos from NEOWISE Reactivation Mission Years Six and Seven": *PSJ* 2, 2, 162.

Masiero, J. R., Mainzer, A. K., Bauer, J. M., Cutri, R. M., Grav, T., Kramer, E., **Pittichová, J.,** Sonnett, S., Wright, E. L., 2020: "Asteroid Diameters and Albedos from NEOWISE Reactivation Mission Years Four and Five": *PSJ* 1, 1, 10.

Hicks, M., **Chesley, J**., Rhoades, H., 2018: "Broadband Photometry of Planetary Radar Target 2013 US3": *The Astronomer's Telegram 11597*

Scheirich, P., Pravec, P., Jacobson, S. A., Ďurech, J., Kušnirák, P., Hornoch, K., Mottola, S., Mommert, M., Hellmich, S., Pray, D., Polishook, D., Krugly, Yu. N., Inasaridze, R. Ya., Kvaratskhelia, O. I., Ayvazian, V., Slyusarev, I., **Pittichová, J.,** et. al., 2015: "The binary near-Earth Asteroid (175706) 1996 FG_3 - An observational constraint on its orbital evolution": *Icarus 245*, 56-63

Lowry, S. C., Weissman, P. R., Duddy, S. R., Rozitis, B., Fitzsimmons, A., Green, S. F., Hicks, M. D., Snodgrass, C., Wolters, S. D., Chesley, S. R., **Pittichová, J.,** and van Oers, P., 2014: "The internal structure of asteroid (25143) Itokawa as revealed by detection of YORP spin-up": *A&A 562*, A48, 9

Hicks, M., Lawrence, K., Chesley, S., **Chesley, J**., Rhoades, H., Elberhar, S., Carcione, A., Borlase, R., 2013: "Palomar Spectroscopy of Near-Earth Asteroids 137199 (1999 KX4), 152756 (1999 JV3), 163249 (2002 GT), 163364 (2002 OD20), and 285263 (1998 QE2)": *The Astronomer's Telegram 5132*

Fernández, Y. R., Kelley, M. S., Lamy, P. L., Toth, I., Groussin, O., Lisse, C. M., A'Hearn, M. F., Bauer, J. M., Campins, H., Fitzsimmons, A., Licardo, J., Lowry, S. C., Meech, K. J., **Pittichová, J.,** et. al., 2013: "Thermal properties, sizes, and size distribution of Jupiter-family cometary nuclei": *Icarus 226*, 1, 1138-1170

Kelley, M. S., Fernández, Y., Licandro, J., Lisse, C. M., Reach, W. T., A'Hearn, M. F., Bauer, J., Campins, H., Fitzsimmons, A., Groussin, O., Lamy, P. L., Lowry, S. C., Meech, K. J., **Pittichová, J**., et. al., 2013: "The persistent activity of Jupiter-family comets at 3-7 AU": *Icarus 225*, 1, 475-494

Meech, K. J., Kleyna, J., Hainaut, O. R., Lowry, S. C., Fuse, T., A'Hearn, M. F., Chesley, S., Yeomans, D. K., Fernández, Y., Lisse, C., Reach, W., Bauer, J. M., Mainzer, A. K., **Pittichová, J.**, et. al., 2013: "The demise of Comet 85P/Boethin, the first EPOXI mission target": *Icarus 222*, 2, 662-678

Chesley, S. R., Belton, M. J. S., Carcich, B., Thomas, P. C., **Pittichová, J.**, et. al., 2013: "An updated rotation model for Comet 9P/Tempel 1": *Icarus 222*, 2, 516-525

Hainaut, O. R., Kleyna, J., Sarid, G., Hermalyn, B., Zenn, A., Meech, K. J., Schultz, P. H., Hsieh, H., Trancho, G., **Pittichová, J.**, & Yang, B., 2012: "P/2010 A2 LINEAR. I. An impact in the asteroid main belt": *A&A 537*, 15

Hsieh, H. H., Yang, B., Haghighipour, 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., **Pittichová, J**., et al. 2012: "Observational and Dynamical Characterization of Main-Belt Comet P/2010 R2 (La Sagra)": *AJ 143*, 5, 104

Meech, K. J., **Pittichová, J**., Yang, B., et. al., 2011: "Deep Impact, Stardust-NExT and the behavior of Comet 9P/Tempel 1 from 1997 to 2010": *Icarus 213*, 1, 323-344

Belton, M. J. S., Meech, K. J., Chesley, S., **Pittichová, J**., et. al., 2011: "Stardust-NExT, Deep Impact, and the accelerating spin of 9P/Tempel 1": *Icarus 213*, 1, 345-368

Meech, K. J., A'Hearn, M. F., Adams, J. A., et. al., 2011: "EPOXI: Comet 103P/Hartley 2 Observations from a Worldwide Campaign": *ApJL 734*, 1, L1

Hsieh, Henry H., Meech, Karen J., **Pittichová, J**., 2011: "Main-belt Comet 238P/Read Revisited": *ApJL 736*, 1, L18

Bauer, J. M., Walker, R. G., Mainzer, A. K., Masiero, J. R., Grav, T., Dailey, J. W., McMillan, R. S., Lisse, C. M., Fernández, Y. R., Meech, K. J., **Pittichová, J**., et. al., 2011: "WISE/NEOWISE Observations of Comet 103P/Hartley 2": *ApJ 738*, 2, 171

Pittichová, J., Kelley, M. S., Woodward, C. E., Meech, K. J., 2009: "Imaging of Comet 21P/Giacobini-Zinner", in Bioastronomy 2007: *Molecules, Microbes and Extraterrestrial Life, ASP Conference Series*, Vol. 420, Eds. K. J. Meech, J. V. Keane, M. J. Mumma, J. L. Siefert, and D. J. Werthimer, San Francisco: Astronomical Society of the Pacific, 2009., p.103

Licandro, J., Campins, H., Kelley, M.; Fernández, Y., Delbó, M., Reach, W. T., Groussin, O., Lamy, P. L., Toth, I., A'Hearn, M. F., Bauer, J. M., Lowry, S. C., Fitzsimmons, A., Lisse, C. M., Meech, K. J., **Pittichová, J**., et. al., 2009: "Spitzer observations of the asteroid- comet transition object and potential spacecraft target 107P (4015) Wilson-Harrington": *A&A 507*, 3, 1667-1670

Meech, K. J., **Pittichová, J**., Bar-Nun, A., et. al., 2009: "Activity of comets at large heliocentric distances pre-perihelion": *Icarus 201*, 2, 719-739

Pittichová, J., Woodward, Ch. E., Kelley, M., et. al., 2008: "Ground-based Optical and Spitzer Infrared Imaging Observations of Comet 21P/Giacobini-Zinner": *ApJ 136*, 3, 1127- 1136

Meech, K., Fernández, Y., **Pittichová, J**., Harrington, D., 2007: "Coordinated Spitzer Comet Nucleus Observations": *NOAO Proposal*, 2007A-0376

Fernández, Y. R., Meech, K. J., Lisse, C. M., A'Hearn, M. F.; **Pittichová, J**., Belton, M. J. S., 2007: "The nucleus of Deep Impact target Comet 9P/Tempel 1": *Icarus 191*, 2, 11-21

Fernández, Y. R., Kelley, M. S., Lamy, P. L., Meech, K. J., **Pittichová, J**., Weaver, H. A., 2007: "Results From SEPPCoN, a Survey to Study the Physical Properties of the Nuclei and Dust of Jupiter-Family Comets": *BAAS 211*, 56.02.

Kelley, M. S., Woodward, Ch. E., Harker, D. E., Wooden, D. H., Gehrz, R. D., Campins, H., Hanner, M. S., Lederer, S. M., Osip, D. J., **Pittichová, J.**, Polomski, E., 2006: "A Spitzer Study of Comets 2P/Encke, 67P/Churyumov-Gerasimenko, and C/2001 HT50 (LINEAR-NEAT)": *ApJ, 651*, 2, 1256-1271

Meech, K. J., **Pittichová, J**., Hsieh, H., et. al., 2005: "Deep Impact mission target comet nucleus characterization": in *Highlights of Astronomy, 13, as presented at the XXVth General Assembly of the IAU*, 770 - 771

Sarid, G., Prialnik, D., Meech, K. J., **Pittichová, J**., Farnham, T. L., 2005: "Thermal Evolution and Activity of Comet 9P/Tempel 1 and Simulation of a Deep Impact": *PASP 117*, 834, 796-809

Meech, K. J., Ageorges, N., A'Hearn, M. F., et. al., 2005: "Deep Impact: Observations from a Worldwide Earth-Based Campaign": *Science 310*, 5746, 265-269

Belton, M. J. S., Meech, K. J., A'Hearn, M. F., Groussin, O., McFadden, L., Lisse, C., Fernandez, Y. R., **Pittichová, J**., et. al., 2005: "Deep Impact: Working Progress for the Target Nucleus - Comet 9P/Tempel 1," Space Science Rev., 117, Issue 1-2, 137-160.

Price, A., B. Gary, J. Bedient, Garnavich, P., **Pittichová, J**., Matheson, T., et. al., 2004: "A New Cataclysmic Variable in Hercules," PASP, 116, 1117–1122.

Pittichová, J. and Meech, K. J., 2004: "Ground-based Support of Comet Nuclei Space Missions," In Bioastronomy 2002: Life Among the Stars, IAU Sym 213, Eds. Ray P. Norris & Frank H. Stootman, Hamilton Island, Astronomical Society of the Pacific, 213–217.

Fernández, Y. R., Meech, K. J., Lisse, C. M., A'Hearn, M. F., **Pittichová, J.** and Belton, M. J. S., 2003: "The Nucleus of Deep Impact Target Comet 9P/Tempel 1": *Icarus*, Issue 164, p. 481-491.

Bauer, J. M., Meech, K. J., Fernández, Y. R., **Pittichová, J**., Delsanti, A. C., Boehnhardt, H. and Hainaut, O. R., 2003 "Physical Survey of 24 Centaurs with Visible Photometry": *Icarus* 166, 195–211.

Pittichová, J. and Meech, K. J., 2003: "Physical Properties of Comet 81P Wild," in *Proceedings of the International Astronomical Conference "Comets, Asteroids, Meteors, Meteorites, Astroblemes, Craters*," Ed. K.I. Churyumov, Vinnytsia, 52-59.

Pittichová, J. and Käufl, H. U.: 1999, "The structure of thermal infrared radiation of the inner coma of comet Hale-Bopp." In *Evolution and Source Regions of Asteroids and Comets, Proc. IAU Coll. 173.* Eds. J. Svoreň, E.M. Pittich, and H. Rickman. Astron. Inst. Slovak Acad. Sci., Tatranská Lomnica, 217-222.

Avila, G., Guirao, C., Rodríguez, J., Alcalá, J. M., and **Pittichová, J**.: 1999, "Spectral observations of comets with simple instruments." In *Evolution and Source Regions of Asteroids and Comets, Proc. IAU Coll. 173*. Eds. J. Svoreň, E.M. Pittich, and H. Rickman. Astron. Inst. Slovak Acad. Sci., Tatranská Lomnica, 235-238.

Pittichová, J., Sekanina, Z., Birkle, K., Boehnhardt, H., Engels, D., and Keller, P.: 1997, "An Early Investigation of Striated Tail of Comet Hale-Bopp (C/1995 O1)": *Earth, Moon and Planets*, 78, 329–338.

Sekanina, Z. and **Pittichová, J**.: 1997, "Distribution Law for Particle Fragmentation Times in a Theory for Striated Tails of Dust Comets: Application to Comet Hale-Bopp (C/1995 O1)": *Earth, Moon and Planets*, 78, 339–346.

Pittichová, J.: 1997, "On the Rotation of the IRAS-Araki-Alcock nucleus": *Planet. Space Sci*., 45, No. 7, 791–794.

Kubáček, D. and **Pittichová, J.**: 1996, "Near-nucleus Imaging of Comet IRAS- -Araki-Alcock 1983 H1": *Earth, Moon and Planets*, 75, 1–16.

Pittichová, J.: 1995, "Computer image processing methods,": *Meteorické správy*, 16, 73–77.