Tae K. Kim, Ph.D.
Research Scientist I
The Center for Space Plasma and Aeronomic Research
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Professional Preparation

- **The University of Alabama at Birmingham** — Birmingham, AL
  Physics, Mathematics — B.S. Degree, *cum laude*, August 2000
- **The University of Memphis** — Memphis, TN
  Physics — M.S. Degree, August 2004
- **The University of Alabama in Huntsville** — Huntsville, AL
  Physics — Ph.D. Degree, August 2014
- **The University of Alabama in Huntsville** — Huntsville, AL
  The Center for Space Plasma and Aeronomic Research — Postdoctoral training, 2014-2018

Appointments

- **Research Scientist I** — January 2019 – Present
  Center for Space Plasma and Aeronomic Research
  The University of Alabama in Huntsville
- **Program Coordinator** — January 2018 – December 2018
  NSF Research Experience for Undergraduates
  The University of Alabama in Huntsville and NASA/MSFC
- **Postdoctoral Research Assistant** — September 2014 – December 2018
  Center for Space Plasma and Aeronomic Research
  The University of Alabama in Huntsville
  Supervisor: Dr. Nikolai Pogorelov
- **NSF EAPSI Fellow** — June 2012 – August 2012
  Solar-Terrestrial Environment Laboratory
  Nagoya University
  Host Scientist: Dr. Munetoshi Tokumaru
- **Graduate Research Assistant** — May 2010 – August 2014
  Department of Physics
  The University of Alabama in Huntsville
  Supervisor: Dr. Nikolai Pogorelov
- **Graduate Teaching Assistant** — August 2008 – August 2010
  Department of Physics
  The University of Alabama in Huntsville
  Supervisor: Dr. Abdallah Elsamadicy

Recent Publications

- **Kim, T. K.**, Pogorelov, N. V., Arge, C. N., Henney, C. J., Jones-Mecholsky, S. I., Smith, W. P., Bale, S. D., Bonnell, J. W., Dudok de Wit, T., Goetz, K., Harvey, P. R., MacDowall, R. J., Malaspina, D. M., Pulupa, M., Kasper, J. C., Korreck, K. E., Stevens, M., Case, A. W., Whittlesey, P., Livi, R., Larson, D. E., Klein, K. G., and Zank, G. P. (2020), Predicting the Solar Wind at Parker Solar Probe Using an Empirically Driven MHD Model, *The Astrophysical Journal Supplement Series*, 246, 40, https://doi.org/10.3847/1538-4365/ab58c9
- Singh, T., **Kim, T. K.**, Pogorelov, N. V., and Arge, C. N. (2020), Application of a Modified Spheromak Model to Simulations of Coronal Mass Ejection in the Inner Heliosphere, *Space Weather*, 18, e2019SW002405, https://doi.org/10.1029/2019SW002405

- Zirnstein, E. J., **Kim, T. K.**, Mostafavi, P., Heerikhuisen, J., McComas, D. J., and Pogorelov, N. V. (2020), Response of Pickup Ions in the Very Local Interstellar Medium to Solar Variations: Implications for the Evolution of the IBEX Ribbon and Interstellar Helium, *The Astrophysical Journal*, 891, 56, https://doi.org/10.3847/1538-4357/ab744b
- Szabo, A., Larson, D., Whittlesey, P., Stevens, M. L., Lavraud, B., Phan, T., Wallace, S., Jones-Mecholsky, S. I., Arge, C. N., Badman, S. T., Odstrcil, D., Pogorelov, N., **Kim, T.**, Riley, P., Henney, C. J., Bale, S. D., Bonnell, J. W., Case, A. W., Dudok de Wit, T., Goetz, K., Harvey, P., Kasper, J. C., Korreck, K. E., Koval, A., Livi, R., MacDowall, R. J., Malaspina, D. M., and Pulupa, M. (2020), The Heliospheric Current Sheet in the Inner Heliosphere Observed by Parker Solar Probe, *The Astrophysical Journal Supplement Series*, 246, 47, https://doi.org/10.3847/1538-4365/ab5dac
- Lamy, L., Prange, R., Tao, C., **Kim, T.**, Badman, S., Zarka, P., Cecconi, B., Kurth, W., Pryor, W., Bunce, E., and Radioti, A. (2018), Saturn's northern aurorae at solstice from HST observations coordinated with Cassini's Grand Finale, *Geophysical Research Letters*, 45, 9353-9362, https://doi.org/10.1029/2018GL078211
- Lamy, L., Berland, C., Andre, N., Prange, R., Fouchet, T., Encrenaz, T., Gendron, E., Haubois, X., Tao, C., and **Kim, T.** (2018), Analysis of HST, VLT, and Gemini Coordinated Observations of Uranus Late 2017: A Multi-spectral Search for Auroral Signatures, SF2A-2018: Proceedings of the Annual Meeting of the French Society of Astronomy and Astrophysics, 29, http://sf2a.eu/proceedings/2018/2018sf2a.conf..0029l.pdf
- **Kim, T. K.**, Pogorelov, N. V., and Burlaga, L. F. (2017), Modeling Shocks Detected by Voyager 1 in the Local Interstellar Medium, *The Astrophysical Journal Letters*, 843, L32, https://doi.org/10.3847/2041-8213/aa7b2b
- Lamy, L., Prange, R., Hansen, K. C., Tao, C., Cowley, S. W. H., Stallard, T., Melin, H., Achilleos, N., Guio, P., Badman, S. V., **Kim, T.**, and Pogorelov, N. (2017), The aurorae of Uranus past equinox, *Journal of Geophysical Research: Space Physics*, 122, 3997-4008, https://doi.org/10.1002/2017JA023918
- **Kim, T. K.**, Pogorelov, N. V., Zank, G. P., Elliott, H. A., and McComas, D. J. (2016), Modeling the Solar Wind at the Ulysses, Voyager, and New Horizons Spacecraft, *Astrophysical Journal*, 832, 72, https://doi.org/10.3847/0004-637X/832/1/72
- Linker, J. A., Caplan, R. M., Downs, C., Lionello, R., Riley, P., Mikic, Z., Henney, C., Arge, C. N., **Kim, T.**, and Pogorelov, N. (2016), An Empirically Driven Time-dependent Model of the Solar Wind, in Numerical Modeling of Space Plasma Flows (ASTRONUM2015), *Journal of Physics: Conference Series*, 719, 012012, https://doi.org/10.1088/1742-6596/719/1/012012
- Manoharan, P., **Kim, T.**, Pogorelov, N. V., Arge, C. N., and Manoharan, P. K. (2015), Modeling solar wind with boundary conditions from interplanetary scintillations, *Journal of Physics: Conference Series*, 642, 012016, https://doi.org/10.1088/1742-6596/642/1/012016
- **Kim, T. K.**, Pogorelov, N. V., Borovikov, S. N., Clover, J. M., Jackson, B. V., and Yu, H.-S. (2014), MHD heliosphere with boundary conditions from the UCSD tomographic reconstruction using interplanetary scintillation data, *Journal of Geophysical Research: Space Physics*, 119, 7981, https://doi.org/10.1002/2013JA019755

Synergistic Activities

- Mentoring NSF Heliophysics REU students at UAH/MSFC, 2014-2019
- Adopt-a-Physicist Program provided by AIP/SPS, APS, and AAPT, Fall 2016
- Event supervisor, Alabama Regional Science Olympiad, 2010, 2011, and 2014
- Reviewer and panelist for NASA proposals; reviewer for AAS, AGU, and EDP Sciences journals
- Contribution to "New Horizons Flyby Modeling Challenge" hosted by the Coordinated Community Modeling Center (CCMC) (http://ccmc.gsfc.nasa.gov/missionsupport/NewHorizons_support.php)
- Contribution to the Parker Solar Probe (PSP) footpoint predictions hosted by the PSP modeling team (https://sppgway.jhuapl.edu/encounters#enc5)