Kate Y. L. Su

Curriculum Vitae

Space Science Institute
✉ *ksu@spacescience.org*
https://kateylsu.github.io/ksu/

Research Interests

- **Debris Disk Evolution** Investigating the dust emission around stars at different ages from main-sequence stars to white dwarfs to further understand the origin, evolution and fate of our Solar System via modeling the distributions and properties of the dust in circumstellar disks using spatially resolved imaging data and/or global spectral energy distributions.
- **Planetary Systems** Investigating the implication of debris disks on planet formation and evolution and understanding the observational characteristics of debris disks as tracers of planet formation.

Education

1996–2000 **Ph.D. in Astrophysics**, University of Calgary, Alberta, Canada.
1993–1995 **M.Sc. in Astronomy**, National Central University, Taiwan.
1989–1993 **B.Sc. in Physics**, National Central University, Taiwan.

Professional Experiences

2024–Present **Research Scientist**, Space Science Institute, Boulder, CO.
2017–2024 **Astronomer**, Steward Observatory, University of Arizona, AZ.
2011–2017 **Associate Astronomer**, Steward Observatory, University of Arizona, AZ.
2013–2017 **Visiting Scholar**, ASIAA, Taiwan.
2005–2011 **Assistant Astronomer**, Steward Observatory, University of Arizona, AZ.
2001–2005 **Post-Doc.**, Steward Observatory, University of Arizona, AZ.
2000–2001 **Post-Doc.**, Dept. of Physics & Astronomy Valparaiso University, IN.

Professional Services

2018–Present **Member of the International Astronomical Union**.
1998–2021 **Member of the American Astronomical Society**.
2018–2021 **Member of NRAO User Committee (UC) and ALMA North America Science Advisory Committee (ANASAC)**.
2016–2019 **Member of the Science and Technology Definition Team (STDT) of the Origins Space Telescope**.

2015–2019 **Member of the SOFIA User Group**.

Referee for **ApJ, ApJL, ApJS, AJ, MNRAS, A&A, Nature**.

Panelist for **Telescope Allocation Committee:**, *Spitzer, HST, NOAO, NASA/Keck (panelist and panel chair), JWST.*

Panelist for **Fellowships:**, *NASA NPP, Arizona 51 Peg b, Arizona Strittmatter, NASA Hubble (panel chair).*

Panelist for **Grants:**, *NASA Origins, XRP, and ADAP programs, NSF AAG.*

Research Grants

Over $3M as PI; *Current active ones:*

2023–2026 **NASA-JWST**, *GO-03189: The Nature of Mineralogical Dichotomy in Extreme Debris Disks*, $224,652.

2023–2026 **NASA-JWST**, *GO-03271: Characterizing the End Stage of Exoplanetary Systems*, $288,991.

2023–2026 **NASA-JWST**, *GO-03786: Sizing up silicates at six small stars: characterising planetary debris orbiting white dwarfs*, $183,923.

2023–2025 **NASA-JWST**, *GO-03690: The rest of the iceberg - dusty white dwarfs exposed by JWST*, $90,705.

2022–2024 **NASA-JWST**, *GO-01647: Caught in the act: a debris disc in outburst*, $188,218.

2022–2024 **NASA-XRP**, *Characterizing Rejuvenated Exoplanetary Systems – A Comprehensive View of Dusty White Dwarfs Using Archival Spitzer Data*, $261,786.

2020–2024 **NASA-ADAP**, *Debris Disk Variability – Exploring the Diverse Outcomes of Large Collisions during the Eras of Oligarchic and Chaotic Growth II*, $412,266.

Invited Colloquia/Reviews in Past 5 Years

Jul 2021 **Tracing the Formation and Evolution of Planetary Debris Disks with Multiwavelength Approaches**, *SOFIA+ALMA joint Summer seminar series – exploring synergies between radio/millimeter and infrared observations*, Online webinar, `https://www.sofia.usra.edu/meetings-and-events/events/tracing-formation-and-evolution-planetary-debris-disks-multiwavelength`.

Feb 2020 **Debris Disk Varabiity – A Legacy from Spitzer**, *Celebrating the Leacy of the Spitzer Space Telescope conference*, Pasadena, CA.

May 2019 **Extreme Debris Disk Variability – a Tracer for the Impacts of Large Asteroids**, *New Horizons in Planetary Systems conference*, Victoria, BC, Canada.

Oct 2018 **Probing Terrestrial Planet Formation by Witnessing Large Impacts in Extreme Debris Disks**, *Bombardment: Shaping Planetary Surfaces and Their Environments conference*, Flagstaff, AZ.

Aug 2018 **Nano Dust as a Possible Cause of Hot Emission in Planetary Debris Disks**, *Astronomy in Focus XXX, presented at IAU XXX General Assembly*, Vienna, Austria.

Jan 2018 **Circumstellar Disks in Young and Old Main-Sequence Stars**, *the 231st AAS Meeting*, FIR-SIG Special Section, DC.

Nov 2017 **Detection and Characterization of Exo-Asteriod Belts**, *colloquium in Iowa State University*, IW.

Jun 2017 **The Inner 25 au Debris Distribution in the eps Eri System**, *SOFIA Tele-talk*, NASA Ames, CA.

Apr 2017 **Debris Disks: Tracers of Planet Formation**, *colloquium in UT-Austin*, TX.

Sep 2016 **Debris Disks: Tracers of Planet Formation**, *colloquium, SAO/CfA*, Boston, MA.

Sep 2016 **Detection and Characterization of Exo-Asteroid Belts**, *the Mike Jura Memorial Symposium*, Los Angeles, CA.

Aug 2016 **Debris Disks and the FIR Surveyor: New insights into the formation and evolution of planetary systems**, *webinar for the Far-IR Scince Interest Group*.

Feb 2016 **Hot Dust Around Young and Evolved Stars**, *Astrophysics with the SPHEREx All-Sky Spectral Survey, SPHEREx Science Community Workshop*, Pasadena, CA.

Publications

- NASA ADS link: `https://ui.adsabs.harvard.edu/search/q=orcid%3A0000-0002-3532-5580`
- 20 first-authored peer-reviewed papers
- a total of 172 peer-reviewed papers
- total number of citations : over 10k
- H-Index for results: 56
- 7 Astro2020 white papers
- 12 press releases